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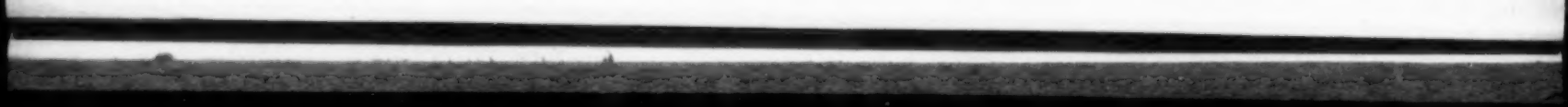

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(Original Official Organ U. S. Vet. Med. Ass'n.)

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VICIOUS ANTIVIVISECTION MEASURE DEFEATED

VETERINARY practice in California was threatened at the general election in November by an initiative measure which, under the deceptive guise of humanitarianism, had for its ultimate object the prevention of all practical experimentation with animals—the means by which science has measured its greatest achievements in the preservation of both human and animal life. Fortunately this ridiculous measure, which struck at the very heart of our modern system of disease control, was defeated by a decisive vote. The veterinarians of that State are to be congratulated on the success of their efforts in that direction.

California is a State in which a large proportion of the population resides in the cities and towns. Such persons, being as a rule unfamiliar with livestock matters, could not be expected to appreciate as readily as country people the absurdity of a law which would render illegal the surgical or medical treatment of any animals that are not physically injured, deformed or sick, and which would prohibit such common operations as castration, dehorning, the docking of lambs, mallein and tuberculin testing, and immunization

against infectious diseases. It is to the credit of the California voters that enough of them understood the true import of the measure to defeat it.

It is a truism to state that without animal experimentation it would be impossible to hold in check the destructive diseases that constantly menace the livestock industry. Indeed, had such legislation been enforced in the past we would have been completely in the dark with respect to many diseases that we now control. It is well known that animal experimentation has led to the discovery of the nature, cause, diagnosis and prevention of many of the infectious diseases, while the curse of other contagions will surely be lifted as a result of future work. The results of experiments with animals have enabled the United States to exclude from the country, or to control, such food-destroying diseases as rinderpest, foot-and-mouth disease, anthrax, Texas fever, hog cholera, surra, swine erysipelas, contagious pleuropneumonia of cattle, sheep scab, and the like. And without abundant livestock—the result of the control of animal diseases—it is questionable whether food enough for the present population of the world could be produced.

The prohibition of animal experimentation would not only prevent the acquisition of further knowledge of disease by scientific research, but would also prevent the manufacture of certain serums, vaccines and other biological products necessary in the diagnosis, prevention and treatment of various animal infections. Furthermore, it would make impossible the use of test animals in the diagnosis of disease, which in the case of certain affections is highly important, as we have no other positive means of identifying those diseases.

Because of the similarity between the higher animals and the human body, discoveries useful to stockmen and veterinarians are of service also to hygienists and physicians. Animal experimentation has resulted in such basic knowledge as that of the circulation of the blood; capillary circulation; the vasomotor mechanism; functions of the nervous system; the flow of chyle in the lacteals; the passage of chyle through the lymph ducts into the venous circulation; the nature of the digestive fluids and the chemical transformation of food through their action; functions of the liver, lungs, kidneys and other organs; the reaction of the cells to various kinds of stimuli; the significance of the endocrin glands; the nature of inflammation and other pathological processes, and numerous other discoveries in physiology, pathology and biochemistry.

Experiments with animals have contributed richly to the current knowledge of drugs and their uses and to the precise information we have of the therapeutic, physiologic and toxic actions of the innumerable substances from which our useful drugs have been selected. Without specific knowledge of how drugs act on the body as a whole, or on special parts of the body, and whether their action is immediate or cumulative, the death rate among persons and animals would be multiplied, and the greater losses among the latter would be a serious economic disadvantage.

Experiments with animals have likewise given information that prevents untold suffering of both persons and animals, by aiding in the preservation of health and hastening recovery from sickness. Persons who treat diseases among animals must be credited with relieving more pain in one day than animal experimentation causes in a number of years, and they do this almost exclusively through the knowledge which such experiments have supplied.

For these outstanding reasons it is very gratifying to learn that the voters of a great State have refused to adopt a measure whose enforcement would jeopardize the health of its people and render extremely hazardous if not ruin its livestock industry.

MOUNTED SERVICE CUP ENDURANCE TEST

On October 11 twenty-seven horses of cavalry type started on the annual endurance ride from Fort Ethan Allen, Vermont, to Camp Devens, Massachusetts, a distance of 300 miles. Each horse carried a weight of 245 pounds and was given five days to complete the race. The major part of the course was over sandy and mountainous roads, but all kinds of footing were encountered in the five days. Generally speaking, this was a severe test, which is plainly shown by the fact that only 10 horses finished. The remarkable speed made by a few of the contestants was an outstanding feature of this year's trial. In fact, such speed with 245 pounds weight can be attained by only a very few unusually good horses. While this weight adds to the severity of the test, it does not give as good a line on the type and blood most useful for cavalry conditions as would be the case if there had been a larger number of animals completing the test from which to draw conclusions.

The race has shown that grades compare favorably with pure breds in endurance, as five of the ten horses to finish were grades. The final result gave first place to a grade Thoroughbred; second, grade Arab; third, grade Thoroughbred; fourth, grade Arab; fifth,

purebred Arab; sixth, Morgan; seventh, Morgan; eighth, Thoroughbred; ninth, Arab, and tenth, grade Arab.

The service cup, for which, among other prizes, the horses contended, must be won three years in succesion to be held permanently. Last year Mr. W. R. Brown's Ramla, a purebred Arab, won it, but this year the grade Thoroughbred winner was Mlle. Denise, belonging to Captain De F. W. Morton, U. S. A.

REPORT IT

The following editorial which appeared in a recent number of *The National Stockman and Farmer* is just as applicable to veterinarians as to the owners and handlers of livestock. This is especially true under present conditions when the large insurance fund, provided by the Congress during each of the last four years for combating any outbreaks of foot-and-mouth disease that might have occurred, has been discontinued.

"We are afraid that the millions of shoes in which our soldiers had tramped over Europe might bring back some stray germs of foot-and-mouth disease. Fortunately no outbreak occurred. Now tourists are returning from Europe, foreigners who went back home after the war are returning to this country, thousands of immigrants are coming in. In their clothing or baggage may be the germs, and they may come in contact with livestock. Every effort is being made to keep them out, but they are invisible and may get through the lines. One more precaution is necessary, a watch by every owner and handler of livestock. Report immediately to the State Veterinarians anything that looks like foot-and-mouth disease. It is infinitely better to have a thousand false alarms than to miss one genuine case, so report if there is any doubt about it. Taken in time millions of dollars may be saved; neglected a few days, our losses may run into millions. Let's take it in time."

PRACTITIONERS ARE INVITED

To send in reports of interesting cases which will be helpful to others for publication in the JOURNAL'S department of Clinical and Case Reports. Give your professional associates the benefit of useful knowledge gained from unusual cases arising in your practice. Address the Editor of the JOURNAL, 1620 Hobart Street, Washington, D. C.

To live in the presence of great truths and eternal laws, to be led by permanent ideals—that is what keeps a man patient when the world ignores him, and calm and unspoiled when the world praises him.—*Balzac.*

SWINE DISEASES[1]

By C. H. STANGE *and* CHARLES MURRAY, *Iowa State College, Ames, Iowa*

WE approach the subject "Swine Diseases" with some hesitancy because of the confusion of opinions expressed and the multiplicity of ideas entertained at present concerning this important factor in our control work, and because we have no satisfactory solution for this situation at the present time. We hope that some suggestions together with records of some experiments may be helpful. It is appreciated that we already have too many opinions, some of which are based upon the most superficial of experiments, others of which have no experimental backing or even a founding on scientific knowledge.

The past ten years have brought about important changes in the source from which most of the information offered the practicing veterinarian comes. The biological houses have been prosperous, while Federal and State governments have been hesitating with reference to funds, with the natural result that some of our leading educational and research men have drifted into commercial lines. These men or the concerns employing them can not be criticized. It is a reasonable and logical result. It seems, however, that an organization such as the American Veterinary Medical Association should be able to do much to assist, encourage and stimulate scientific research along veterinary lines. We suggest that the support and assistance of the National Research Council be sought and that diseases of swine be suggested as one of the projects.

Throughout the Corn Belt there is no more important or pressing problem among those concerning animal health than that of swine diseases. The confusion which exists at present is equal in extent to the importance of the problem. We are suffering at present from a lack of reliable information to give the practitioner. There are too many things we do not know and there is much guessing. Based on clinical observations and what substantial research work has revealed, we should recognize the following infectious diseases of swine as of greatest significance to our animal industry:

HOG CHOLERA

This is the most important and common disease of swine. It is accepted as being the one resulting from an infection with the filterable virus, concerning which there is no question at the present

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

time, so far as its etiological significance is concerned. The controversy is concerning the exact nature of this agent, but nothing tangible has been published for confirmation. When hog cholera is uncomplicated the lesions are usually of the purely hemorrhagic nature, and these may be present in very small numbers in mucous and serous membranes and in some of the parenchymatous organs as kidney, heart and lungs. We have according to this no pectoral or intestinal form of hog cholera. This is by far the most contagious disease we have among swine, and its mortality is higher than any other of which we know.

In making a differential diagnosis we know of no rule that will apply to all cases. No known diagnostic formula has stood the test and we must yet rely upon the judgment of the veterinarian after he has considered carefully the history, environment, symptoms and lesions. Many more errors have been made in the past two years throughout the Corn Belt by looking for some indefinite, uncommon or even new condition, sometimes in cases where quite common and practically characteristic lesions of cholera were present, than by calling some other disease hog cholera. Many hogs have been lost as a result of this error. Fortunately, cholera can probably be more satisfactorily controlled than most of the other diseases, because there may be developed an immunity more pronounced than for any other disease. It may be permissible to repeat the statement we have made on a previous occasion, that the first and most important fact that should be determined in all cases of swine diseases is *whether hog cholera is present,* and we should be very certain that the virus is not present before the owner is advised that hogs are not suffering from cholera and serum will do no good.

DIPHTHERITIC OR NECROTIC ENTERITIS

Necrobacillosis, Salmonellosis, Pig Typhus, etc.

This condition may apparently be caused by one or more of a number of organisms. Ulcerative enteritis is frequently associated with other diseases or debilitating conditions and was long considered as the intestinal form of hog cholera. The symptoms and lesions are so well known that to enumerate them here would be poor use of your time. In connection with the etiology, however, we wish to remark that in 1918 members of the research staff (Murray and Benbrook) observed ciliated protozoa in considerable numbers located usually at the junction of the necrotic area and

the living cells of the colon of affected hogs. These were identified as *Balantidium coli*. *Balantidium coli* are protozoa described by Malmsten in 1857. They have been found in Asia, Europe and America and on a number of islands, and are regarded as a cause, either primary or aggravating, of colitis in man. The *Balantidium coli* is frequently present in the rectum of pigs (Leuckart), but the encysted stages serve only for transmission. It has been observed that this caused little or no disturbance in pigs, and the latter are regarded as the source of infection for man. More recent work done by Brumpt, in which he infected young pigs by using *Balantidium coli* from infected monkeys, suggests that this parasite may have pathogenic and harmful species and consequently some significance in the cause of enteritis in pigs.

HEMORRHAGIC SEPTICEMIA *(Swine Plague)*

This disease in our opinion has been given undue and unjustifiable prominence during the past few years. We believe that hemorrhagic septicemia in swine as a primary disease occurs very rarely. As a complication the presence of the bipolar organism is a rule rather than an exception. Associated with the hog cholera virus it frequently produces pneumonia, which was formerly referred to as swine plague, and later usually as the pectoral form of hog cholera. During the past few years enteritis and hemorrhagic septicemia have been grouped together with most other diseases of swine not hog cholera, as mixed infection, and we will now consider some of this rather indefinite group of ailments. Bacteriological examination made on 134 animals after death in a series of experiments conducted by one investigator (Pfeiler) gave

TABLE 1.—*Results of Pfeiler's Experiments*

Principal lesion	Kind of Organism Found									
	Bacillus suipestifer group	*B. Coli*	Streptococcus	*B. pyogenus suis*	Staphylococcus	*B. pyocyaneus*	Bipolar bacillus		Diplococci	Not classified
Enteritis	28	24	1	....	4	5	3	4	2	....
Pneumonia	1	1	....	....	....	....	4	1	....	1
Pectoral and intestinal	14	12	....	....	1	5	16	2	....	4
Hemorrhages	....	4	2	1	2	2	1	2	....	1

the following interesting results as near as can be determined from the tables submitted:

The figures in the table indicate the number of times the organism was found. In a few cases (10-12) more than one organism was isolated. Some workers have found the *Bacillus necrophorus* and claim to have reproduced enteritis by feeding cultures to pigs. The same claim has been made by others in regard to organisms mentioned in the table, especially the *Bacillus suipestifer* group. Evidently the *Balantidium coli* and many of the above organisms stand in much the same relationship to enteritis of pigs.

Both the pneumonias and enteritis of swine have been quite commonly called mixed infection and very generously treated with "mixed-infection bacterins." One of the Iowa veterinarians (F. H. P. Edwards) gathered data in regard to the application of bacterins from thirteen different concerns producing them, and the replies are summarized in Table 2. These replies indicate a great variation in opinions as regards the nature of the diseases for which bacterins are indicated as well as the quantity and time of administration. It is difficult to see how they can all be right.

BRONCHO-PNEUMONIA *(So-called Flu)*

This condition, occurring in the swine-raising States during 1918-19 as a widespread infection, caused a heavy monetary loss, not so much through the death of swine as through the loss in flesh during the progress of the disease and the subsequent setback during convalescence. The mortality was low, probably less than 1 per cent. Variously diagnosed in different localities and by different workers as mixed infection, swine plague and hemorrhagic septicemia, much confusion among veterinarians in their lines of treatment resulted. Through work carried on during the fall and winter of 1919 and 1920 we have been forced to the conclusion that the bipolar organism, which had been most generally credited as the etiologic factor, plays little if any part in the causation of the disease and represents a secondary invader when it is present. In stained smears from the blood, spleen and lungs we have found quite uniformly occurring a very small non-motile, Gram-negative coccus, which when injected intravenously in fairly large dosage has reproduced the disease in swine as a highly acute septicemia. Injected in extremely small dosage, a subacute type of the disease, resembling in all respects the disease observed in the field in natural outbreaks, has been produced, and after running a typical course recovery has usually occurred.

TABLE 2.—*Summary of Replies from Thirteen Manufacturers of Bacterins*

COMPANY NO.	MENTION THE DISEASES OF SWINE YOU WOULD SUGGEST THEY BE USED IN.	WHAT DOSES; WOULD YOU REPEAT THE DOSE; IF SO, WHEN?	WHAT RESULTS ARE YOU GETTING IN THE FIELD WITH YOUR MIXED BACTERINS SWINE?
1	Hemorrhagic septicemia and enteritis.	Medium, with hog-cholera serum and virus.	Some good; others no value.
2	Hemorrhagic septicemia and complications.	2 c.c., not with hog-cholera serum.	Very satisfactory.
3	Necrotic enteritis, swine plague, paratyphoid infections and garbage poisoning.	2 c.c.	Generally good.
4	Pathologist will return in spring.		
5	Doctor in charge sick.		
6	Thumps, pneumonia, enteritis and complicated cases of hemorrhagic septicemia (where *B. suisepticus* is complicated with other organisms).	Variable; large in acute conditions.	Extremely optimistic. Nearly equal to serum.
7	Eliminates accurate diagnosis.	Use specific bacterin.	
8	Pneumonia, enteritis, infectious rhinitis, polyarthritis.	2 c.c. (100 billion).	Very good.
9	.....	2 c.c. (80 billion).	Highly satisfactory.
10	Diseases cannot be differentiated.	2 c.c. (20 billion).	Uniformly satisfactory.
11	*B. suisepticus, B. suipestifer, B. pyocyaneus, B. paratyphosus, B. coli* infection.	4 to 8 c.c. (50 billion to 100 billion).	40 to 100 per cent.
12	Necrotic conditions in intestines and lungs.	40 billion.	Contradictory.
13	Enteritis (necrotic) or lung and intestinal complications.	2 c.c.	Good results (enteric conditions).

The course of the disease in outbreaks and the symptoms are so familiar to all that recounting them at this time is deemed unnecessary. The most common lesions observed are the broncho-pneumonia and the congested superficial lymph glands. Pigs artificially

injected generally show a bluish discoloration of the skin of the belly; passive congestion of the digestive organs, with marked gastritis; congestion of the mucosa of the respiratory organs and a reddish-yellow, frothy fluid filling the bronchioles; petechiæ on both mucous and serous surfaces of the heart; swollen, juicy, congested lymph glands; congested kidneys with occasional petechiæ, and reddened urinary bladder.

Pigs recovered from both natural and artificial infection have shown very irregular susceptibility to subsequent infection, some showing a complete immunity, others succumbing to large doses of the coccus administered intravenously. Immune bodies (agglutinins) have been demonstrated in the blood of sick and recovered pigs only in low dilution, while in pigs given repeated injections of sub-lethal doses the agglutinins have been found present in dilutions as high as 1 to 320.

Other animals than swine, including rabbits, guinea pigs, the donkey, but not the domestic fowls, have shown a marked susceptibility to infection when the organism is injected intravenously, dying usually within 24 to 72 hours and presenting the same clinical picture as pigs suffering from a natural infection, and showing on autopsy quite the same pathological changes as swine dying in the field.

Further work on this disease is recognized as necessary and is contemplated for the coming year. Unqualified claim as to the organism observed being the cause of the disease in natural outbreaks is not held by us, but its so frequent occurrence in the organs of sick animals, and its production of a disease so closely resembling the one occurring in the field, suggest the possibility of the same and the importance of further study, and we present the matter to other workers for corroboration or disproval.

DISCUSSION

CHAIRMAN BEMIS: Are there any questions or discussion?

DR. MCAUSLIN: Dr. Fitch expressed a concensus of opinion in his report this morning on the infectious diseases of cattle. I wonder if it would be possible for a Committee on Swine Diseases to be appointed to give us their findings as we had on the abortion disease this morning. Certainly Dr. Stange has brought up a number of things that are absolutely contradictory on the face of things, and if a committee were appointed possibly they could get together. Certainly Dr. Stange has pointed out absolutely and irrefutably that the majority of investigators are working in the dark. I will put that in the form of a motion, that such a committee be appointed, to report back to the Association.

(Seconded by Dr. John Lowe.)

DR. JOHN LOWE: I think this means a summary of what we know at the present time, so that we have some point to start from.

DR. FITCH: While I am perfectly in favor and in sympathy with the motion, I have just come from the meeting of the Section on Sanitary Science, and they are there discussing problems of swine diseases. It is perfectly reasonable that they may appoint a committee for the same thing. It seems to me this is a subject that should be brought before the Association in general session.

CHAIRMAN BEMIS: I think that is a good suggestion and really a matter for the entire Association. There is a phase of this subject which concerns the practitioner in particular and another phase which affects others. That is the reason we have swine diseases discussed in both sections at the same time. That indicates, just as Dr. Fitch has said, that this is a subject that should be rounded up for the entire Association.

DR. MCAUSLIN: I would like to call Dr. Fitch's attention to the fact that we didn't ask for conjunction with any other section, so that we would get a lucid view of the matter; and it can be brought before the entire session, or our committee could confer with the committee of the other section. Simply because one section takes it up is no criterion why we should not take up the matter and work in conjunction. Dr. Stange's paper certainly shows that there is a great barrenness of investigation and results.

(The vote was taken on Dr. McAuslin's motion that a committee be appointed to investigate swine diseases and report back to the Association, and the motion was lost.)

DR. BELL: I would like to make a motion to extend a vote of thanks to Dr. Stange for his paper, with the request that he report back developments next year.

(The motion was seconded by Dr. McAuslin and carried.)

Iowa Homestead says of the Bureau of Animal Industry's runt inquiry: "The number of runty pigs, calves, and other animals produced annually is a factor of considerable economic importance to the farmer and the country as a whole. We hope that the bureau will some day be able to supply breeders with information on this subject. It is certainly worth investigating."

Farmer and Stockman says editorially: "Some livestock owners have not yet joined in the nation-wide campaign against tuberculosis. They fail to see that the loss of an animal slaughtered now is small as compared with the losses this animal will eventually cause by infecting other animals. There is no good reason to doubt the reliability of the tuberculin test. It is 99 per cent efficient when made by a competent veterinarian."

VETERINARY TRAINING FOR GENERAL PRACTICE[1]

By HERBERT LOTHE
Waukesha, Wis.

THE ultimate end of veterinary study is the prevention and relief of disease among animals, and it is this end that justifies the study of veterinary science. The ultimate end is not the creation of a field for the exploitation of the individuals who may pursue its study, but for the good of the public as a whole, of which the veterinarian is a part. From this statement it should not be understood that the ultimate end is one of philanthropy, for the practice of veterinary science is a business conducted for profit, the same as any other legitimate commercial enterprise. Because the practitioner sells his services makes his position no less justifiable or economically secure. The very fact that the practitioner has been able to exist and prosper more or less is evidence that he satisfies a want in industrial economy. How well he satisfies this want depends upon how thoroughly he is able to meet the needs of the community he serves. The better he serves his community the more he prospers financially. His ability to serve depends in a great measure upon his knowledge of what veterinary science can and can not do, and upon his judgment and diplomacy in presenting his ideas.

A successful practice, then, does not depend alone upon knowledge of veterinary science, but upon other factors as well. If I were to enumerate, in the order of their importance, the requisites for a successful veterinary practice I would place them something like this: (1) Location; (2) personality of the practitioner; (3) knowledge of veterinary medicine. I do not wish to be understood as believing that knowledge is of little value or that a successful practice can be built up without it, for such an idea is far from my thoughts. I simply want to bring out the fact that there are other prerequisites. A man with a fair knowledge of veterinary science and a good personality in a good location will do more veterinary work than a man with the best veterinary knowledge and a poor personality located in a community where veterinary work is not so plentiful or necessary. Give this same man with the best veterinary knowledge a good personality, and place him in the same location where veterinary services are in demand,

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

and he will do the community more good and prosper more than the man with a fair knowledge of his science. I simply want to bring out that knowledge of veterinary science is just one prerequisite for successful practice. Other things being equal, the more knowledge the better the practitioner.

Locations can not be influenced to any great extent and are largely a matter of selection. Personality is an abstract something inherent in the individual and can not be influenced to any great degree by training. Knowledge of veterinary medicine is entirely a matter of training, depending to a greater or less degree upon individual ability to learn. The qualification, then, that can be shaped is knowledge of veterinary science.

There are at least three factors the character of which have determined the young veterinarian's knowledge when he receives his coveted "sheepskin" on graduation day. They are (1) the physical plant or equipment of the college; (2) the teachers; (3) the course of study.

It is not the intention in this short paper, nor is it the writer's province, to discuss these factors in detail; they are largely problems of pedagogics and require solution by those pedagogically inclined and experienced. However, pedagogics is a means to an end and not an end, the end in this particular instance being to turn out a product that will best serve a practical purpose, namely, a practicing veterinarian. The practitioner is best familiar with the problems he has to meet and may well suggest to the teacher what they are and possible means of meeting them. It is with this thought that this short paper has been written.

COLLEGE EQUIPMENT

The question of college equipment will only be touched upon briefly. It has been pretty conclusively proven, by the closing of most privately operated veterinary colleges, that medical training according to modern approved methods can not be carried on at a profit. The cost of equipment is too great. It is sufficient to state that for best results equipment must be adequate and of the best.

TEACHERS

A great deal depends upon the class of teachers. These may be divided into two classes—those that teach pre-clinical branches, and those that teach clinical branches. Under pre-clinical branches will be included such subjects as chemistry, biology, pharmacology, pathology, anatomy and physiology, while the clinical branches

include the subjects of medicine, surgery and obstetrics with their various subdivisions. Pre-clinical teachers might well be specialists in their particular branches. Clinical teachers should by all means be men of broad training and experience in the practice of the profession as related to their special branch. By this it is not meant that they should devote the major part of their time to practice and teach as a side issue. If a veterinarian is to do justice to teaching he can not devote the major part of his time to making emergency veterinary calls. He should, however, "keep his hand in" by treating clinical cases. In no way can the writer see how a teacher can become familiar with the problems met in practice except by meeting them in actual practice.

THE COURSE OF STUDY

The course of study may be divided into pre-college, college and post-college. It is not the intention to discuss these in detail, but in a very general way. The details are a matter of pedagogics.

Pre-College Training

The pre-college training is of vast importance. To take up properly the study of veterinary medicine the student must have a certain amount of preliminary training. The four-year high-school requirement of the American Veterinary Medical Association is none too high. The case of the poor boy with deficient preliminary training has been used as an argument for low entrance requirements, but when closely scrutinized this argument is found to be a justification of the poor school rather than the poor boy.

A teacher in a veterinary college once made a remark to the writer something like this: "Before we had our high-school entrance requirement we got many students of mature years with considerable worldly experience and judgment who knew what they came to college for and made good in college and after graduation. Our entrance requirement now keeps many of these men out, and in their place we get high-school graduates lacking in mature judgment and without any definite idea of what they need to learn or expect to do when they graduate."

I have often thought of that remark, made by a man of wide experience in teaching veterinary students and for whose judgment I have the profoundest respect. The thought has now come to my mind that possibly our requirements were not quite high enough. Possibly the added requirement of college training in English,

chemistry, biology and physics would help eliminate this immaturity and indefiniteness of purpose by adding years to the age of the student. Surely it would tend to turn out a better finished product. But the time is probably not ripe for such a requirement. The time will come when our best veterinary colleges will require some college training for entrance.

College Training

Veterinary college training may be divided into pre-clinical and clinical. The pre-clinical training is a preparation for the clinical study of medicine, surgery and obstetrics, and consists in the study of such branches as anatomy, physiology, pharmacology, pathology, etc. The better training the student has in these fundamental branches the better practitioner he will make. The science of veterinary medicine is nothing more than the application of known facts of chemistry, biology, physiology, pathology, etc., to the treatment and prevention of disease in animals. Veterinary medicine is no longer a system of memorizing symptoms with their antidotes, but a science based upon known facts. A practitioner can not have too much knowledge of the basic sciences.

We often hear the remark that these things are all right for the "scientific" veterinarian, but the practitioner needs something more practical. The terms "scientific" veterinarian and "laboratory" veterinarian have somehow become synonymous in the minds of many, in contradistinction to "practitioner." This raises the question as to which is of higher scientific value, laboratory findings or clinical observations. We are "apt to call pathology real, or pure, or more or less accurate science, as against presumably unreal, or impure, or more or less inaccurate clinical data." The "scientific character of a procedure depends not upon where or by what means facts are procured, but altogether on the degree of caution and thoroughness with which observations are made, inferences drawn and results heeded." Laboratory investigations and practice are "one in spirit, method and object." One can be as scientific as the other, and both classes of veterinarians need a good knowledge of the basic sciences. Both are or should be scientific.

The character of the college clinical training is what determines to a great degree whether the prospective practitioner enters practice gracefully or awkwardly. While it is recognized that college begins rather than ends a practitioner's training, still the character of his

clinical training will in a great measure determine the first impression he makes upon his clientele.

The object of our clinical training should be to *learn* and *learn how*. The "learn how" is where most of our graduates are deficient when entering practice. It is a sad sight to observe the impression a veterinary practitioner makes upon a good horseman by beginning an examination of a horse for soundness by starting at the caudal end of the animal. The writer had this experience, and it was very humiliating later to have a stable "flunky" demonstrate the method of examination and approach of a horse recognized by horsemen as standard. A client judges a veterinarian largely in terms of what he himself knows, and if the veterinarian bungles these common things the client is very apt to think his knowledge of scientific things is bad.

There are so many seemingly insignificant things as compared to the general principles of veterinary medicine, which mean so much to the young practitioner, that are not given the attention they should be given in colleges. These things are nothing more nor less than technique and should be taught religiously, not to the exclusion or at the expense of other more scientific subjects, but in addition to them. Everyone admires good technique, whether it is in a pianist, a ball player or a veterinarian. Students should be drilled in these practical things until they become second nature and a matter of habit. Such things as animal restraint, bandaging, methods of clinical examination, post-mortem examination, etc., might well come under this class. The idea is not to carry these things to extreme at the expense of the more fundamental principles so as to make an artisan of the student, but enough time should be given to these practical things to familiarize the student thoroughly with them.

We often hear that this or that school is a good theoretical institution while another is a practical school paying less attention to the theoretical part of veterinary science, the idea being that the latter institution is the one for the prospective practitioner. There is no logical reason why theoretical training and practical training should be incompatible. The idea is not to teach less theory and more practical things, but to teach more of both. Our agricultural clients are beginning to demand a more finished product than formerly. The dentist when he leaves college is able to do a good job of filling a tooth, and the veterinarian should be just as able

to do the technical part of his job as to make a diagnosis. The subject of animal husbandry is one that should not be neglected. A stockman is apt to think that if a veterinarian does not know a well animal he is not apt to know a sick one. The breeder of dairy cattle, for instance, has a higher regard for the professional ability of a veterinarian who knows breed type and what are good butter-fat records than for the practitioner who is ignorant of these things.

The college has another mission to fulfill in the teaching of the more scientific branches of the science; the "learn" of the science is as important as the "learn how." Successful clinical training depends upon clinics. It is not mere numbers of cases but variety that determines the effectiveness of the clinical teaching. A large surgical clinic can not compensate for lack of medical or obstetrical material. It is in the clinic that the student correlates his preliminary training with practice. The greater variety of clinical cases a student has seen and studied at college the better he is equipped to give good service to his clients.

Post-College Training

Our brother, the physician, spends some time following graduation as an interne in a hospital. He realizes the value of more clinical training than can be gotten from his regular college courses. So, too, the veterinary practitioner should avail himself of an opportunity to perfect himself following graduation. There are few well-equipped veterinary hospitals, so the only recourse the recent graduate has is to affiliate himself with some good practitioner with experience. Not only is this of value in developing technique and in observation of clinical cases, but it gives the young graduate a bird's-eye view of practice as a whole, showing the relationship of the scientific to the commercial.

If there is any one thought that the writer has tried to bring out in this short and rather incomplete paper it is that the better trained a veterinarian is both practically and scientifically, the better practitioner he makes.

DISCUSSION

CHAIRMAN HILTY: Gentlemen, this is a very valuable paper, and there should be some discussion of it. Is there anyone who will open the discussion?

DR. CHRISMAN: There is one point in this paper that strikes me forcibly as being one of the keynotes to the success of the practitioner, and that is

the man who has a well-grounded knowledge of animal husbandry before he studies veterinary medicine. It has seemed to me that I should know first of all the animal in health in order to give the animal my intelligent service, from an analytical standpoint. I believe that the veterinarian should thoroughly know the animal from every standpoint, the history, the care and needs, and how to make an efficient inspection, and so on, before he can make a practical, scientific and successful veterinarian.

I remember not a great while ago talking to a splendid man who didn't quite know the needs of his animals, what the animal should be, or what the animal should have; and when it was sick he sent for a veterinarian, who diagnosed the case; it was the intestines, and he said that he should give the animal every six hours a dose of cottonseed meal—six pounds of cottonseed meal twice a day. Now, no one would have any respect for any veterinarian who had no more knowledge than that.

If a veterinarian does not know animals in health, he does not know what the animal requires—hasn't a sufficient knowledge of what we term animal husbandry; doesn't know the general habit of animals. We should know the animal from a commercial standpoint, the size and the conformation. We find that the livestock men like to know and discuss with the veterinarian these different points.

I remember when I first started practicing, for illustration, I hadn't had much experience with Thoroughbred horses. I was raised in a draft-horse section, and my knowledge was from the draft-horse view, and I knew very little about Thoroughbred horses. I was called to look at a Thoroughbred, and I went there with fear and trembling to make the examination. The gentleman said, "I think you don't know Thoroughbred horses very well," and I said "No, I haven't had much experience with them," and the gentleman didn't seem to be very much impressed with me. He said, "I used to raise horses myself; I was a race-horse man, and I tested the conformation of a race horse." I had in mind that the horse that was standing there was ready to go into the race, and when he asked me to pick out the horse, I picked that one, and I fell down. He said "That one is not ready; it is in preparation." If that man had been the Board of State Examiners they would have flunked me right there. I didn't know what I should have known.

That is just an illustration. I went back home and studied conformation of the race horse. I think a great many make this mistake, and I think we ought to know better. We should have a more thorough course in animal husbandry in veterinary colleges and applied veterinary courses, and a thorough knowledge of good English, and a good academic course.

CHAIRMAN HILTY: Is there any one else? These are all the papers that we have before us.

Here is a letter referred by Dr. Mayo to this section, written by some man who wants to change his location from one State to another. Does anyone know about this subject of reciprocity?

DR. FOGLE: That has been before the Ohio association, the medical profession, and I don't know but the time is ripe to have this apply to veterinarians.

DR. HOSKINS: That matter has been discussed until it is threadbare. There is only one solution, and that is that the American Veterinary Association modify its veterinary methods. That is a part that should come under the auspices of the United States Civil Service Commission. The A. V. M. A. may be represented by the Bureau of Animal Industry, or by the veterinary faculty of the schools, to conduct through the Civil Service Commission a matter of this kind, and give to these men and women a certificate showing that they passed that examination, and then have the State laws modified to accept that in lieu of the State board examination. That would give plenty of reciprocity between the States, and I have always truly felt that would accomplish what is needed. We have always utterly failed in accomplishing this reciprocity, though it has been taken up time and again.

Research Specialist Wanted in Uruguay

The Experimental Station for the study of animal diseases of the Sociedad Rural, Department of Durazno, Uruguay, is desirous of securing the services of a specialist for research work on splenetic fever, especially from the viewpoint of immunizing stock and eradicating the disease from that country. It is necessary for the applicant to be familiar with disease-carrying ticks and piroplasmosis, and to have conducted experiments and published original works on the subject. In addition, he must have had sufficient practical work to give him complete mastery of the subject. While the Experimental Station is not an official institution, it is closely connected with the Government offices which have supervision over similar lines of work. The salary is not stated, but they want a first-class man and are willing to pay accordingly.

They Want to Know

An important function of the Bureau of Animal Industry is to give information and advice to stock raisers. Some requests, however, are hard to answer satisfactorily. This one, for instance:

"Please give me a receipt that will fatten a poor mule or horse, something that will make it look fat or puffed so that they will do to trade on. If you will send me this receipt I will pay for it."

The best the Bureau could do was to advise plenty of feed and good care, and no charge was made for this "receipt."

More worthy of attention was the following from a farmer in the Southwest:

"Have you any thing on hydrofobi in catle there has bin severl died here they get mad and fite any thing in site and sloberd at mouth. Can one cow anokelet an other."

ORGANIZATION FOR COMPULSORY DIPPING FOR THE ERADICATION OF MANGE

By A. E. CAMERON
Medicine Hat, Alberta, Canada

MANGE of cattle has existed in western Canada for some years and has caused a considerable amount of trouble in the southwestern part of Saskatchewan and the southern portion of Alberta. This territory was put under quarantine, no cattle being allowed to leave this defined area without inspection by a veterinarian of the Health of Animals Branch if for immediate slaughter, while if for any other purpose the cattle were required to be treated with the dipping solution authorized by the Department of Agriculture, under the supervision of an inspector. Besides the general quarantine, infected herds with their contacts were held under quarantine until treated and reported as free from contagious disease.

These restrictions were very irksome, and many meetings of stock associations and shippers were held to devise means whereby they might be removed. At one of those gatherings the stockmen were informed by the Deputy Minister of Agriculture that if they would give their assistance and coöperation for compulsory dipping, and the dipping were carried out to the satisfaction of the Department of Agriculture, the general quarantine would be removed and any mange which might subsequently be detected would be dealt with by the quarantine and treatment of infected herds and their contacts. This was readily agreed to by the stockmen, and the order in council was made, which was necessary for the legal enforcement of the dipping.

The territory held under the blanket quarantine, known as the mange area, has been reduced from time to time as portions were found to be free from mange. After a careful inspection of the different herds of cattle, during the end of 1919 and the beginning of 1920, the mange area was again reduced, leaving a small section of Saskatchewan and a larger part of Alberta to be organized when the compulsory dipping order came in force. There are many difficulties in the eradication of mange from an extensive territory with range cattle at large. It was, however, believed this had become possible, as the herds of cattle on the open range are now comparatively few, most range cattle being in large fenced leases.

Accordingly, the Veterinary Director General issued instructions to proceed at once with the necessary organization to carry the compulsory dipping into effect. The quarantined area is administered by the Chief Inspector for Alberta, acting under the Veterinary Director General. It is divided into districts, the executive work of which is carried out by veterinary inspectors. Each of these districts is subdivided and range riders are employed who each cover a subdistrict, reporting mange or suspected mange to the veterinary inspector under whose instructions they act. Reports from veterinary inspectors are forwarded to the Veterinary Director General through the office of the Chief Inspector for Alberta. It was essential to have men who could get in touch with the individual stock owners in one or more townships, according to the settlement of the country. For this purpose veterinary inspectors selected reputable owners who were willing to assist in this way and act as committeemen for their localities. Decentralization is carried out as much as possible, each veterinary inspector being responsible for his district. He can consult the Chief Inspector for Alberta on any matter, while the latter refers the larger issues to the Veterinary Director General.

It may be assumed that any measure of compulsion must have the coöperation of the people concerned, and to gain this was the most important step. Ignorance of the disease is one reason why there is difficulty in getting active coöperation; many believing that mange is just in the country and always will be. To overcome these ideas a capable lecturer, a veterinarian of the Health of Animals Branch, went in succession to each inspector's district. The veterinary inspector arranged the meetings at which these lectures were given, and they were advertised locally. The lectures had as their primary object the enlightenment of stock owners on the cause of mange, its treatment and the possibility of its eradication. The habits of the acari were described and mounted specimens were shown under the microscope. The reasons for the two dippings were given, and it was pointed out that the only treatment recognized by the Department of Agriculture is dipping in the calcium sulphide solution. This has been found safe and efficient, while the cost is comparatively low.

This dipping solution is made in the proportion of 10 pounds of lime and 24 pounds of sulphur to 100 gallons of water. The lime and sulphur are mixed into a paste and boiled in a smaller

quantity of water for not less than two hours and finally diluted to the above-mentioned proportions. The solution is used at a temperature of 105° to 115° F. and must have a specific gravity of 1023. The tester used is similar to a urinometer. The cattle are immersed in this solution twice, the second dipping being not less than 10 and not more than 15 days after the first treatment. The second dipping insures the destruction of parasites which may be hatched from eggs which escaped at the first dipping, before they reach maturity.

For the benefit of committeemen and in order that they could transmit the information to cattlemen in their locality, circular letters were sent to them periodically. These letters were written in as interesting a manner as possible, giving a general idea of the disease, its treatment, and the advantages to the stockmen if the restrictions were removed. Instructions were given for the disinfection of stables, corrals, etc., between the first and second dippings.

Having shown that the eradication of mange was possible if all cattle were properly treated and reinfection prevented by the disinfection of buildings, etc., it was brought home to each one that he was personally interested in seeing that no cattle were missed, whether purebred, dairy, range or farmers' cattle, and that calves must in every case be brought to the vat for treatment.

There were already many vats in the mange area, but the building of many more was undertaken in order that no stock owner, especially farmers with one or two cows, should have to bring their cattle more than about 10 miles to be treated. The building of these extra vats was assisted by the Department of Agriculture, a grant being given when the vats were built according to the plan of the Department. The vat, which could be of either the swimming or the cage type, had to be in working order, approved and reported on by the veterinary inspector, before the grant was paid. At these Government-assisted vats the charge was fixed in the agreement signed so that not more than 40 cents a head could be charged for the two dippings.

Advantage was taken of the meetings at which the lectures were given to organize the district, and where this had not already been done committeemen were appointed. Arrangements for the building of the vats necessary were also made, and where one man would not undertake the building of a vat, it was found possible in nearly

every case to have several form themselves into an association for the purpose.

For each vat a superintendent was appointed. He was instructed in his duties of supervising the preparation of the solution and seeing that every animal was properly dipped. Range riders saw that the large herds were gathered clean, and where any owner had not brought his cattle to the vat he was hurried up, or, if necessary, the cattle were brought in by the range rider himself or by someone hired for the occasion. In the latter case the owner was required to pay the expense.

The date set for the commencement, after consultation with representative stockmen, was June 24, this being a time when few cows would be left in calf, the winter coat would be entirely shed, and, as experience has shown, mange is in a more or less dormant state, possibly on account of the fine, oily condition of the hair and skin. Less infection showing at this time of year, the dipping would, presumably, be more effective, with fewer parasites to destroy and less scale to protect them.

Lists were prepared of the stock owners in each district, with the number of their cattle and the vat at which they proposed to dip their animals. These lists, made by the range riders with the assistance of committeemen, were at the vat concerned, so that the cattle could be checked as they were dipped.

Articles dealing with compulsory dipping were prepared by officers of the Health of Animals Branch and published in the newspapers circulating in the mange area. The last action was the posting of large notices in public places notifying stock owners of the compulsory dipping order with its requirements. With this chain of officials, lectures, circulars, newspaper articles and posters it would appear impossible for anyone owning cattle in the mange area to plead ignorance of the regulations.

In every community, however, there are irreconcilables who, on general principles, are "agin' the Government." In order that such people should not interfere with the effective dipping of all cattle a fine of $500 was made possible. A heavy fine was necessary, as, for example, if a large stock owner chose to move his cattle out of the mange area without a license, his profits if the market were favorable might easily reimburse him for any small fine he might have to pay.

The shipment of cattle for any purpose after the 24th of June

until the dipping was completed was prohibited unless the cattle were accompanied by a certificate that they had been twice dipped. The railway companies were notified of this, as of all other regulations.

Dipping was carried out as arranged, with only a few delays owing to unforeseen circumstances, such as boilers leaking and accidents to vats. There was little trouble in getting the cattle to the vats, although some owners had to be hurried up. Veterinary inspectors made a daily visit to each vat in their district and saw that everything was progressing satisfactorily. Range riders assisted in their subdistricts, while vat superintendents remained constantly at the vat to supervise the actual dipping. The time left to make the necessary arrangements was short, and that the compulsory dipping has been satisfactorily carried out reflects credit on all concerned.

Although it would probably be too much to hope for, in such a large territory, that mange would be eradicated with the one compulsory double dipping, it is not unreasonable to expect that any fresh outbreak could be kept within easy control by the quarantine and treatment of infected and in-contact herds.

Dr. C. E. Edgett, V. S., D. S. O., late Director of the Canadian Veterinary Forces in London, England, and a member of the British Columbia Veterinary Association, is a candidate for member of Parliament in the Yale, B. C., constituency, to fill the vacancy caused by the resignation of the Hon. Martin Birrell.

He has the support of the Soldier-Farmer Party and also the Liberals have decided not to enter a candidate against him.

According to Ohio newspapers, our colleague, A. S. Cooley, of Cleveland, was elected as Representative to the State Legislature with the highest vote of any of the fourteen selected. In addition, he polled the seventh highest number of all votes cast, being led only by President-Elect Harding, County Commissioner Kohler, Senator-Elect Willis and three State officials.

The *National Stockman and Farmer* states that a stud of Suffolk horses was recently dispersed in England after having been bred by the same family on the same farm for 150 years.

THE CONTROL OF ANTHRAX IN THE CANAL ZONE [1]

By W. J. TAYLOR, *Cristobal, Canal Zone*

I WAS away on business when I got the request of our Secretary to present this topic, and I did not have time enough to prepare a paper, so I will make a few extemporaneous remarks concerning anthrax in the Canal Zone.

We are surrounded by certain limitations which do not exist with practitioners and research workers in the States, in that we are not able to prepare statistics that would become public property.

The Canal Zone consists of a strip of land five miles east to west from the center of the canal between the two oceans. In 1918 the idea was conceived that as a matter of precaution it might be well to turn over the land available for cattle pasture. Up to that time the Panama Canal with its working forces had been drawing on the States for its beef supply, and it was found that in Colombia there was no outlet for the beef, the animals being slaughtered for their hides. The Canal Zone authorities entered into a contract with Colombian authorities to import cattle into the Zone. Very soon anthrax broke out, and I was asked to go to the Canal to control it. As far as I can say, it is no greater factor than in the United States; but we have had certain conditions to deal with entirely different from those under which most practitioners and sanitarians have to work. At the present time we have 18,000 head of cattle owned by the Government on the Canal Zone.

A short time after America entered the war arrangements were made for supplying a certain amount of beef for army consumption. The daily consumption of the cattle by the Canal employees does not exceed 50 head a day, but to meet the new demand it was necessary to increase the killing to 200 or 250 a day.

The anthrax in the tropics corresponds very closely to the change of seasons, the wet and the dry seasons. The dry season is the anthrax season. This comes on the first of December and lasts until the first of May or June.

Certain recommendations that I made against the importation of cattle from Colombia could not be carried out, as it was necessary to import these cattle to furnish the beef. In the fall of 1918 I was in Colombia choosing the kind of cattle to be shipped to the Zone. To avoid anthrax in the Zone we vaccinated something like 18,000

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

head of animals, with not very good results. Those animals were kept thirty days before shipment, and even then after arriving on the Isthmus anthrax developed. We used a serum.

The point I wish to bring out is that we found very little evidence of anthrax causing the death of animals—not to a sufficient extent to cause any alarm. The people of Colombia are not so up-to-date and they do not recognize the importance of destroying all evidence of the carcass by burning it, so the disease is on the increase in that country.

Putting those cattle on the Zone after vaccination seems to lower their vitality sufficiently to allow them to develop the disease, and in that way a large area of the pastures of Panama have become infected. That is what we are up against. We have lost animals on the ships, but the losses are mainly from 48 hours to several days after landing. It seems they were infected in the country from which they came. I think that is a very important factor, because it opens up a line of thought which men dealing with the disease in this country have not met with. There is very good evidence to show that a few hours on shipboard or perhaps other conditions that will slightly devitalize an animal will cause development of anthrax.

I wrote Dr. Hoskins that if I said anything it would not be along the line of control of anthrax in the Canal Zone, because you might think I had something new to present. I want to make a statement of our conditions down there and ask you for suggestions.

During the next year it is not our plan to import animals during the dry season except for immediate slaughter. I might explain by saying that most of the cattle are young stock brought from Colombia and placed over various parts of the pasture area that has been developed, and so far as I know the loss among 12,000 to 17,000 young animals could be counted on the fingers of one hand. The young animals do not show themselves carriers of infection, but as soon as the dry season sets in we have to be very careful about fat animals, for in a few days after landing anthrax will develop in those cases.

The question arises, Is there some method by which vaccination may be carried on prior to shipment to prevent the development of this disease? During the coming season it is our purpose to kill all animals soon after landing. Our system of inspecting meats is carried out antemortem and postmortem. A smear is taken from

every spleen, and in that way we are sure we will catch everything in the way of anthrax coming over the killing floor.

All the fat cattle imported on the Zone during the dry season have some time during the year developed anthrax, while the young cattle have not. Perhaps the vaccine which we used was not potent for that particular strain or that particular stock. The fact that they later died shows that there was something lacking.

I think Dr. Eichhorn has a more interesting paper, and I am turning the further discussion of this subject over to him.

"On the representation of citizens and officials of Pittsburg County (Okla.), made personally to Governor Robertson, that the anthrax epidemic prevalent in that county for several weeks threatened to spread over other territory, the Governor issued a deficiency certificate for $19,000 to be used by the State in helping to fight the disease in that and adjacent counties. Several hundred head of livestock have been lost."—*Wichita Daily Stockman.*

Eugene Ferron, V. M. D., of Philadelphia, Pa., formerly assistant to the manager and veterinarian for the Cauca Valley Agricultural Co. of Palmira, Colombia, South America, is now veterinarian for the Asociacion de Agricultores del Ecuador, with headquarters at Guayaquil, Ecuador, S. A. Dr. Ferron left for Guayaquil last April after his discharge from the U. S. Army on his return from overseas, where he served in the Veterinary Corps, A. E. F., with the rank of captain.

Drs. Eduardo P. Stirling and Pedro Sesane, Uruguayan veterinarians, are spending several months in this country on an official mission from their Government. They are particularly interested in studying methods for the prevention of livestock diseases and the enforcement of meat inspection regulations, as well as in visiting the leading veterinary colleges.

Dr. Burton R. Rogers gave his stereopticon lecture on "Tuberculosis" before a large number of delegates at the convention of the Institute of American Meat Packers recently held in Atlantic City. Dr. R. F. Eagle, as Vice-Chairman, arranged for the lecture and presided at the meeting.

THE DISSEMINATION OF ANTHRAX INFECTION THROUGH INDUSTRIAL SOURCES[1]

By A. EICHHORN, *Pearl River, New York, and* A. L. EDMUNDS, *Franklin, New Hampshire*

THE handling of anthrax hides in tanneries has been recognized as a source of danger to the employees coming in contact with them, and the statistical data available prove that a large proportion of the anthrax cases in human beings develop among the tannery workers and among laborers employed in loading and unloading hides. Thus, from 1900 to 1911 in Germany the number of cases among tannery employees varied from 20 to 50 annually.

The necessity of large importations of foreign hides to the United States from China and India especially, due to the shortage of native hides during the war period, resulted in a pronounced increase of anthrax infections in human beings and also in the occurrence of anthrax infections in animals kept in districts where tanneries were obliged to resort to the importation of hides.

The fact that the danger from native hides may be considered negligible may be explained in that on the North American Continent, as well as in most of the European countries, sanitary measures employed for the control of anthrax infections prevent in most instances the skinning of anthrax carcasses, thereby eliminating danger from such sources. Such is not the case in the Asiatic countries, and the experimental work conducted in this country as well as in Europe with hides from those sources has conclusively established the fact that the occurrence of anthrax in imported hides is very common. In two instances the senior writer had occasion to demonstrate this fact in connection with his investigations on the occurrence of anthrax infections in tanneries handling imported hides.

Veterinary sanitarians are primarily interested in the dissemination of anthrax from the tanneries through the drainage water, inasmuch as it is a practice to establish tanneries in localities where the drainage water from the tanneries may be readily emptied into smaller or larger streams. Such practice naturally results in the pollution of the streams into which the drainage water from the tannery flows, and if such polluted streams are accessible to cattle, or, on the other hand, if the topography of the land around the

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

stream is such that it is subject to inundation, the infection is disseminated upon the adjacent land. In this manner permanently infected anthrax districts have been established in the United States and Canada primarily as a result of the fact that some tanneries which previously handled only native hides have in the past few years resorted to importation of hides.

The control exercised by the Federal authorities on the importation of hides is not at the present time effective in eliminating anthrax infection. The requirement of certification at the point of shipment, before a United States consular officer, that the hides constituting the shipment are not from animals affected with anthrax, does not afford a sufficient guarantee for the elimination of the infection. Likewise the dipping at such points without proper supervision could not be made effective. In view of these conditions the control of the infection from such sources becomes a problem of the health and sanitary authorities in this country. Up-to-date tannery owners were required to satisfy only the board of health authorities as far as safeguarding the health of the employees is concerned; whereas the livestock authorities are entirely disregarded on the problems which arise from the handling of anthrax-infected hides in tanneries.

Repeated dissemination of anthrax infections from tanneries and thereby the creation of anthrax localities points out the necessity of inaugurating a proper and effective control for such establishments, and therefore the livestock sanitary laws in States where tanneries exist should include such measures which will place tanneries under their supervision, giving the livestock authorities such powers as will safeguard the livestock and agricultural interests in such communities against the possibility of infection.

It is true that we have many instances in which tanneries handling infected hides are not responsible for causing outbreaks of anthrax in animals, but it has been established that in such instances the failure to communicate the disease from those sources is due to the tannery being so located that there are no pastures in the surrounding localities of the polluted streams, or to the fact that the drainage water empties into a large stream in which it immediately becomes very much diluted, or that the drainage water passes into a stream having an extremely slow flow whereby the maximum of the solid material settles to the bottom, or that cattle have no access to the streams in which the tannery drainage flows, or finally in case the tanneries do not handle hides from districts in which anthrax pre-

vails. In all these enumerated instances the danger of the dissemination of the disease, while not always entirely eliminated, is reduced to a minimum by the natural environments. On the other hand, in other instances under more favorable conditions the anthrax infection is disseminated from the tanneries, infecting the adjacent locality, thereby causing periodical outbreaks of the disease.

It must be recognized that hides from anthrax carcasses harbor a tremendous number of spores, and in view of the fact that the viability of these spores extends over many years, the sterilization of the hides and the drainage water constitutes a rather difficult problem. Contamination of the hides with ordinary pathogenic germs, especially those which are not spore-bearing, can be eliminated much more readily than the resistant anthrax spores. Investigators who have conducted experimental work along this line have long realized the difficulties confronting them in safely eliminating anthrax infections from hides, and while methods have been developed by which this may be safely accomplished, they involved a procedure which the tanneries are not willing to adopt, inasmuch as they claim that the value of the leather suffers as a result of the application of these methods. In the face of experimental work, however, it is evident that their contention is not well founded.

The Seymour-Jones method and the Schattenfroh method have, according to many investigators, both proven effective; and according to the investigations of Tilley, of the Bureau of Animal Industry, the sterilization of the hides by these methods may be successfully accomplished without any injury to the hides. By both of the methods mentioned the destruction of the infection is accomplished by chemical means, the hides being subject to disinfection during the soaking process. The methods are described in detail in the original articles of these investigators or in the publication by F. W. Tilley on "A Bacteriological Study of Methods for the Disinfection of Hides Infected with Anthrax Spores." By subjecting the hides to any of these processes the anthrax infection can be eliminated, or at least controlled; that is, if some of the spores should survive the process of disinfection they would become attenuated to such an extent that they would no longer possess disease-producing qualities. The disinfecting of the hides through chemical action therefore can be accomplished in tanneries provided this is satisfactorily carried out. This has been further established in the control of the infection in the Whitefield, New Hampshire, district, which will be described later.

The possibility of the elimination of the infection by physical methods has also been employed in many of the investigations. The fact that in the various processes employed in the tanneries preparatory to the tanning of the hides, especially in the soaking and fleshing, the largest proportion of the infection is eliminated, and that in these processes a great amount of infection passes into the drainage water, suggested the possibility that the infection might be eliminated from the drainage water by suitable procedures. The chlorinization of the water has given the best results, but would represent such a costly method that from a practical point of view it must be left out of consideration. On the other hand, since the great proportion of the infection is carried into the drainage water by solid particles, especially the fleshings, the installation of devices whereby the solid material may be removed would naturally tend to reduce the pollution of the water to a minimum.

With this in view many tanneries, both in the United States and especially in Europe, either voluntarily or through authoritative compulsion installed sedimentation tanks and also various kinds of sereens for the purpose of eliminating the solid material from the drainage water. In some instances revolving screens have also been installed for the exclusion of the solid material. Likewise in connection with the sedimentation tanks the water flowing out of them is directed into filter beds, which not only accomplishes the final elimination of the solid material contained therein but would also tend to retain most of the microörganisms from the drainage water. Several of the tanneries in Pennsylvania are equipped with sedimentation tanks of this kind, and unquestionably if they are properly cared for and the filter beds are also kept in good condition the pollution of the streams from the tanneries may be successfully prevented.

It is of paramount importance that where any of these systems or a combination of these systems is established the greatest care must be exercised to supervise their proper operation. It is essential that a series of sedimentation tanks must be provided, the number depending on the amount of water used in the tannery. There should be only one outlet from the tannery for all the water used, which should be permitted to flow into the sedimentation tanks. From the last tank the water should be directed into well-constructed filter beds, and these also must be cleansed from time to time of any refuse which may impair their proper functioning.

In some instances the senior writer had occasion to observe the unsatisfactory functioning of the sedimentation tanks from inattention, and he succeeded in demonstrating without the slightest difficulty anthrax organisms in the slimy material collected along the canal carrying the water from the tannery into the river. In this particular instance, however, on inquiry it was found that no attention whatever was paid to the sedimentation tanks, which, of course, under such conditions could not perform the function for which they were intended.

The fact that by far the largest amount of anthrax infection from hides is contained in the solid particles, and that they may be eliminated by devices, would tend to minimize the danger of the infection if nothing else but such means are used to guard against the pollution of the streams by tanneries; at least the infection would hardly exceed proportions whereby it would be capable of infecting animals which are being periodically vaccinated against anthrax. However, in such instances it would be essential to vaccinate all the stock exposed to such polluted water or pastured upon land inundated by the water; whereas in the absence of such precautions even the ordinary vaccination would not entirely prevent losses, as the animals would be subject from time to time to such extraordinarily heavy exposure that the immunity conferred upon them would not be sufficient to protect them against the infection.

The junior writer had the opportunity in his experimental work along this line to prove this point. From personal observations and also from authentic statements of owners of the land along a polluted river in the Whitefield, New Hampshire, district it was found that after the recession of the water following an inundation, pieces of hides, tremendous quantities of fleshings, etc., were found upon the land several miles from the tannery. Such polluted soil no doubt in some cases contains anthrax spores in such quantities that at times the ordinary vaccination is ineffective to prevent the development of the disease.

It may be readily seen, therefore, that in order to safeguard the livestock in such localities it is essential that the methods adopted for prevention must be carried out painstakingly and that any neglect or disregard may be followed by serious results. Once the infection is established on the land, even if proper precautionary measures are taken toward eliminating the infection, the animals must be vaccinated for many years to come in order to prevent any losses from the disease. Such land must naturally be considered as per-

manently infected, and only by persistent vaccination and thereby preventing all reinfections will it be possible to make such land safe.

Continued inattention toward the prevention of constant infection of the land from tanneries would not only result in a persistent infection, but also would tend to increase the infected area, as the infection may be carried from such sources to adjoining territories, continuously enlarging its extent. This was also observed in the Whitefield, New Hampshire, district in 1919, when the disease spread from the meadow lands upon the farms along the hillsides, in some instances several miles distant from the meadow land. It is not necessary to dwell upon the many channels whereby the infection may be spread from localities to more distant points, if we now only consider the established facts that flies, birds, dogs, etc., may disseminate the infection from one place to the other.

From the numerous instances in which anthrax has been disseminated by tanneries it is of the utmost importance that the livestock sanitary authorities should be empowered to require such precautions from the owners of tanneries as will prevent the dissemination of anthrax. Only by so doing will it be possible to safeguard the livestock from any danger emanating from polluted tannery drainage. If such power had been given to the livestock sanitary authorities many outbreaks could have been prevented in the United States and the livestock owners would have been spared great losses and a permanent danger which prevails in such districts.

CONTAMINATION OF LAND BY TANNERY DRAINAGE IN NEW HAMPSHIRE

New Hampshire, as far as can be ascertained, was free from anthrax until 1915. In June of that year several reports of deaths of cattle were received from the towns of Whitefield and Dalton by the Commissioner of Agriculture. The investigations revealed anthrax infection, and after removing the cattle from the infected pastures no further cases appeared until the winter. At that time several animals died from the disease, which was definitely diagnosed as anthrax. It was further established that the deaths resulted from feeding of hay cut from the meadow lands bordering the Johns River. The Chief of the Bureau of Animal Industry of Washington, D. C., was informed of the occurrence of anthrax in that district, and a bacteriologist from the Pathological Division was assigned to proceed to New Hampshire to assist in the investigations for the purpose of preventing the spread and losses from the disease.

Specimens of hay cut from the infected meadow land have definitely proven a contamination of the pasture with anthrax infection.

It was further established that the occurrence of the disease was due to the contamination of the Johns River with drainage water from the tannery located in the town of Whitefield. This tannery up to 1915 principally used native hides for tanning purposes. Due to the shortage of hides at that time, importations were resorted to, which came from various parts of the world, many of the shipments originating in China. In the course of the investigations by the State Department of Agriculture, the presence of anthrax infection was found in the water in which the hides were soaked. Consequently the infection must have persisted in different parts of the tanneries in which the hides were handled, such as in the hide room, soaks, fleshings, etc. All the drainage water from the tannery empties into the Johns River, which is located about 50 yards from the tannery soaks. From that point the Johns River is somewhat winding in its course and empties at a distance of about 6 miles from the tannery into the Connecticut River. The flow at some points is slow, at others more rapid, and the river is bordered on both of its banks by rich meadow lands. The meadow lands again adjoin farms, most of which are located on slightly sloping and rolling hillsides. The Johns River overflows the meadow lands in the spring and also during the season of torrential rain-storms.

As soon as the presence of the infection was established, the hay originating from the meadow land was ordered burned under official supervision. The animals in that locality were vaccinated by the veterinarians in the State service. The premises where the disease occurred were thoroughly cleaned and disinfected. Instructions were issued by the authorities on the disposition of carcasses which died from anthrax, and such sanitary measures were inaugurated as would prevent the spread of the disease.

In order to prevent the continuous recontamination of the land, and also on account of the possibility of spreading the infection from the Johns River into the Connecticut River and thence upon the land bordering the latter river, it was deemed advisable to require that the hides in the tannery be soaked in a suitable disinfectant. The tannery officials agreed upon such a procedure, and soaking of the hides in a bichloride of mercury solution was decided upon. Pasturing of animals on meadow lands was prohibited.

In order to establish whether vaccinated animals might be safely placed upon the pastured land, especially since reinfection of this

land was guarded against by the soaking of the hides in the bichloride of mercury solution in 1917, the Department decided to carry on experiments to determine whether the animals might be safely pastured upon the land and also whether the hay after being cut and placed in the barns for winter use could be fed to the animals.

The following precautions were taken before undertaking the experiments:

1. It was required that the tannery at Whitefield soak the hides in bichloride of mercury solution of 1 to 1,000 for 24 hours, which is known to destroy or at least attenuate greatly the anthrax spores in infected hides.

2. The meadow lands along the Johns River were burned, covering a territory varying in width from a few rods to half a mile and in length from three to four miles. Some of this land was burned over twice, while all of it was burned over once. This precaution was taken in order to destroy the anthrax spores present on the surface.

3. Thorough cleaning and disinfection of all premises where cases of anthrax were known to exist, and the proper disposition of all carcasses which died of anthrax.

4. Vaccination of all cattle in the entire area.

The vaccination of 1917 consisted in the administration of either the simultaneous treatment or the double vaccination with No. 1 and No. 2 vaccines. All the animals were held in the barn for about 10 days, after which they were turned on the infected land.

In this experimental work coöperation of the land owners with the Department was solicited and an agreement was entered into which resulted in the vaccination of about 20 animals. A few days after the placing of the animals upon the pasture one animal died, and the farmers, without consulting the veterinarian in charge, removed the other animals from the meadows, which automatically terminated this experiment.

In the spring of 1918 it was decided to try the experiment again but in a somewhat different manner. The farmers agreed to furnish the cattle for this work, the Department of Agriculture taking full charge of them, and no animal was to be removed from the meadows during the term of the experiment except by order of the Department. To insure the farmers against financial loss it was agreed that any animals dying, either as a result of vaccination or from direct infection, should be paid for by the Department from the

funds appropriated for this purpose, the full appraised value of such animals being allowed.

Instead of placing the cattle on small inclosed plots, as was done in the first experiment, they were now given free range over most of the quarantined area. On some farms the cattle did not necessarily drink the contaminated water from the river, as there were brooks coming from the highlands to which they had access. It was noted, however, that they did occasionally drink from the river. This river water has been found to carry heavy solutions of antiseptics used by the tannery company in the process of tanning hides. Not only that, but many thousands of hides imported from China, and known to be infected with anthrax, had been washed or soaked in water which was allowed to run into the river from the soaking vats.

It has been stated that in the experiment of 1917 one animal died, which clearly proved that the process of vaccination used did not in all cases protect the cattle from this disease. In 1918 a different procedure was therefore carried out. Forty-four animals were used in this experiment, each of them being ear-tagged and records made of estimated weight, age, previous history and appraised value.

The process of immunization was then begun. Each animal first received 10 c.c. of serum and 1 c.c. of vaccine No. 1. Ten days later they were given a dose of vaccine No. 2, and again ten days later a special vaccine somewhat stronger than the No. 2 was administered. The animals were retained in the barns for ten days after the last vaccination, when they were turned on the meadows.

During the latter part of the summer a registered bull was added to the experimental herd. He was vaccinated by the procedure described above, and after remaining on the infected meadows for several weeks showed no ill effects from the exposure.

The Department, wishing to carry the experiment still farther, gave its consent to the cutting of some of the hay for barn feeding. About 40 tons of this hay was placed in special barns and was to be fed under special permit to animals that were pastured on infected areas. No further vaccination was deemed necessary. Twenty other animals which had not been on the meadows, but which were vaccinated as described above, were also used in this feeding experiment. No bad results followed the feeding of the hay.

These experiments having proven that animals could be successfully vaccinated against the existing infection, some farmers informed the Commissioner of Agriculture that they wished to pasture

the animals upon the meadows; others desired to cut the hay and feed it to vaccinated animals. The animals were vaccinated and some of them after complete vaccination were placed upon the infected land. In about four weeks' time anthrax was reported to have occurred in two of the animals on pasture, with typical manifestations of the disease.

In the face of the favorable results and the control of the disease in 1917 and 1918, losses from anthrax came as a surprise, and investigations were immediately undertaken to establish whether the soaking of the hides in the bichloride of mercury solution was consistently carried out. These investigations revealed that the instructions were entirely disregarded; that the bichloride, if such had been used, was not used in a sufficient strength to insure the destruction or even an attenuation of the spores. This fact would explain the recurrence of the disease among the animals.

It must be considered remarkable that the vaccination of the animals, even with the special vaccine, was not sufficient to prevent the disease. This may be explained by the fact that the tannery imports practically all of its hides and the infection must have been very heavy. Thus the animals drinking the water from the contaminated stream took in such a large amount of spores that the immunity produced by the vaccination was not sufficient to prevent the disease. As a matter of fact observations by the authors conducted along the river have shown that tremendous amounts of fleshings and other solid materials were carried down the stream, which could be observed even at a distance of four miles from the tannery. These conditions show the extraordinarily heavy exposure to which the animals were subjected.

From the infection in the meadows the disease spread to the adjacent farms on the hillside, carried by flies and possibly by other means. In all a total of 6 cattle and 12 horses died. A large proportion of the affected animals recovered after the liberal use of anti-anthrax serum. The failure of conscientiously carrying out the dipping of the hides as agreed upon no doubt was responsible for the 1919 outbreak, and the observations in the past three years warrant the conclusion that, unless precautions are taken by the owners of the tannery as outlined by the State authorities, the meadow lands along the Johns River could not be safely utilized for pasturing or for hay production.

In view of the fact that the dipping requirements on the hides can be controlled effectively only by strict supervision, the installation of revolving screens and settling tanks would afford the best

solution for controlling the infection. At least the ordinary form of vaccination in such cases would prevent losses and thereby the spread of the disease. It is contemplated to equip the plants with such means as will effectively take care of the solid material emitted from the tannery, and it is thought that by persistent vaccination the disease may be effectively controlled and the extension of the anthrax district prevented.

CONCLUSIONS

1. The drainage water from tanneries handling foreign hides constitutes a source of danger for polluting streams with anthrax infection. In at least two instances in the past five years new anthrax districts have been created by such tanneries in the United States and Canada.

2. Either Federal or State authorities should be empowered to compel tannery owners to adopt such means as will prevent the contamination of streams with anthrax infection. The soaking of the hides by either the Seymour-Jones or Schattenfroh methods will effectively control the anthrax infection in hides. These methods, however, are only effective if consistently carried out.

3. If the soaking in disinfectants is not practiced, the elimination of the solid matters from the drainage water should be insisted upon. This may be accomplished by the installation of revolving screens and settling tanks.

4. The effective operation of the screen and settling tanks should be periodically controlled.

5. Where no precautions are taken to guard against continuous pollution of the drainage water, and where animals have access to the stream in which such drainage water flows, they should be vaccinated not only in the routine manner but should also be periodically revaccinated in order to confer upon them the maximum of immunity.

6. Even if the necessary precautions are taken by the tanneries, the animals which have access to the land previously known to have been infected by tanneries should be regularly vaccinated. In case of the development of anthrax in such districts, the outbreaks should be controlled by the usual approved sanitary measures.

The writers desire to express their hearty appreciation to Andrew L. Felker, Commissioner of Agriculture, and Dr. Charles Duncan, Secretary of the State Board of Health of New Hampshire, for their valuable assistance offered in connection with these investigations.

THE DIAGNOSIS AND TREATMENT OF CERTAIN SKIN DISEASES OF SMALL ANIMALS[1]

By H. J. MILKS, *Ithaca, New York*

THE diagnosis and treatment of the diseases of the skin constitute a considerable part of the work of the veterinarian who deals with small animals. The treatment varies so greatly that a slipshod diagnosis is not sufficient. The numerous forms of skin trouble have led to a great number of separate diseases and in many cases to a number of synonymous names for different conditions. There are several classifications which may be followed, but this paper will be limited to a few of the more important nonparasitic diseases and the different forms of mange.

ACNE OR FURUNCULOSIS

Acne is an inflammation of the sebaceous glands and hair follicles, frequently progressing to pus formation, and characterized by pin-point to bean-sized nodules appearing on an otherwise healthy skin. Furunculosis, although given as a synonym by many authorities, is reserved by Hutyra and Marek for another disease with larger foci, more intense pain and greater destruction of tissue.

The disease occurs most frequently on the bridge of the nose or on the face. The inflammatory foci are first nodules which after a time become filled with pus. Sometimes several coalesce and form a large slough. It is always a troublesome disease to cure, as new foci will form by the time the earlier ones are healed, and thus we have a succession of pustules.

Diagnosis.—This is made entirely by the location and appearance of the nodules and pustules. Whether a distinction is drawn between acne and furunculosis depends upon the extent of the lesion, as stated above; but usually a single classification is sufficient.

Treatment.—While the treatment of the individual pustules has not given serious trouble in the few cases we have had, the difficulty has been to prevent a new crop. The usual surgical procedures, such as opening and cleaning, have sufficed for those present, but seemed to have no influence on the formation of subsequent pustules. Our only permanent successes have been obtained by the use of autogenous bacterins, which have given us uniformly good, prompt results.

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

SEBORRHEA (DANDRUFF)

Seborrhea is described in two forms, according as whether the secretion is oily (oleosa) or dry (sicca). The dry form is said to occur mostly behind the ears and on the neck, shoulders and tail, but may involve other parts of the body, while the oily form develops on those parts thickly covered with hair. In dry seborrhea there is an excessive amount of bran-like yellowish or grayish scales together with a greasy mass, often dark in color on account of the presence of dirt, which surrounds the hair follicle. The hairs are matted into tufts by the excretion, which seems to work up along them, and become loosened so that they are readily removed by rubbing. The skin is normal beneath the hair and dirt. In the oily form the skin is covered by an oily substance, which, drying, readily appears as yellowish-gray crusts.

Diagnosis.—Seborrhea may be distinguished from eczema because in eczema the skin is altered; from mange by the slight itching, by the fact that sarcoptic and follicular mange commonly involve certain parts of the body first, and finally by an absence of parasites.

Treatment.—Treatment may be divided into general and local. Under the head of general may be included tonics, as iron and arsenic. Any digestive disorder should be corrected. The local treatment consists in removing the crusts and scales, followed by the application of astringents and stimulants with the idea of influencing the glandular secretion. Resorcin, salicylic acid and sulphur are the most important and may be used in ointment or solution. For reasons of cleanliness lotions are to be preferred. Resorcin is usually given first place in the remedies for seborrhea, although in one case upon which almost everything had been used over a period of several months, and after failure with resorcin, we succeeded by having the dog washed with a mild potash soap followed by daily applications of salicylic acid 1 part, glycerin 3 parts and alcohol 60 parts. This particular animal improved rapidly. The hair stopped falling after the third application, and six treatments followed by another bath effected a cure that was permanent for at least several months.

ECZEMA

Eczema is a noncontagious inflammation of the skin, characterized primarily by exudation, erythema, vesicles and pustules leading to scales and crusts and accompanied by burning and itching. Its causes are chiefly due to mechanical, thermal, chemical or bacterial

influences, some of the more frequent being parasites, soiling the body with excreta, pus from wounds, etc., especially in long-haired dogs. While it is often impossible to connect any internal disease with eczema, certain digestive disturbances are often accompanied with it, and it is not rare in debilitated or badly nourished animals or in cases of rickets, diabetes, etc. No animals or class of animals are free.

Various methods have been advanced for classifying this common disease: According to its stage, eczema erythematosa; location, eczema capitis; condition, moist or dry; extent, circumscribed or diffuse; and to its chronicity, acute or chronic. For our purpose it seems well to follow the classification of Hutyra and Marek, who describe acute diffuse eczema of the long-haired parts and circumscribed eczema occurring on different parts of the body.

Acute diffuse eczema is often seen back of the ears, on the neck and shoulders and back of the thighs. It begins as small circumscribed spots that spread rapidly until large areas are involved. When seen early the eruption takes the form of roundish, sharply circumscribed, shiny orange-yellow or red spots surrounded by papules and vesicles within an outer darker red ring, but in the later stages may consist of a raw surface with broken-off or matted hair covered with a yellowish or grayish exudate. On the newer part of the lesion, that is, toward the periphery, one will find the hair broken off and the skin cracked and covered with serum or pus. The lesion is very sensitive and itchy and is consequently altered by the animal licking it. Acute diffuse eczema occurs less frequently on the thin-haired parts, yet we have frequently seen it on the side of the face.

Circumscribed eczema shows little inclination to spread and occurs on parts of the body more liable to mechanical injury, dirt, fleas, etc. It may take an acute course but more often follows a chronic course. On the scrotum we have seen it most often as an acute disease. Circumscribed eczema often occurs on the back, especially in old, fat animals. The hair becomes thin or is broken off, and the skin is unevenly thickened or thrown into folds and may be moist, although in most cases it is scaly. Itching is intense and persistent. When localized on the tip of the tail an ulcer may result. One of the most important forms of circumscribed eczema is that of the external auditory canal, commonly called non-parasitic otorrhea.

Diagnosis.—Eczema is easily diagnosed when typically manifested by its location, rapid spread, the presence of nodules and pustules and moist condition of the skin. Kaposi recommends in doubtful cases to rub the suspected places with dilute caustic potash solution, when small moist dots or vesicles appear if the condition is eczema. The differential diagnosis from mange will be given later.

Treatment.—The treatment of eczema may be divided into general and local. There are no specifics.

General treatment: A great deal of attention has been given to the diet, and yet except in very few cases I have been unable to couple eczema with the diet. In human medicine highly nitrogenous foods are usually omitted, but in canine patients a lack of meat appears frequently to be the cause of the trouble. All spiced food, sugar, etc., should probably be prohibited. Each case of course must be decided on its merits. Correctives to the digestive tract are frequently useful. Among these are laxatives, intestinal antiseptics, etc. Free catharsis, preferably with a saline, is valuable in acute conditions. Diuretics may be of some service. Arsenic is frequently prescribed, but is not indicated in acute eczema or when the inflammation is high. In any case it is generally believed that arsenic is contraindicated unless the condition of the animal is such as to require arsenic if there were no eczema. Thyroid extract in small doses has been found useful in certain eczemas of the young and aged in human medicine and may be of service in veterinary practice.

Local treatment: This is probably of most importance in treating the disease. The choice of the remedy depends upon the condition of the inflammation. In acute cases all stimulation should be avoided and something soothing used. Water should be avoided as much as is compatible with cleanliness in acute and subacute eczema, but may be made less irritant by the addition of boric acid, bran, starch or borax. Soap is useful in subacute and chronic eczema, but should not be used in the acute form. Tar is indicated in the chronic forms of the disease, the rule being that the more chronic is the eczema the more is tar indicated. Crusts should be softened with oil rather than with soap and water, and in extreme cases may be softened with warm starch or linseed poultices. Salves and pastes should be loosened in the same manner. It is often necessary to take some measure to prevent the dog licking the medicine off or injuring the lesion.

The treatment of a few different types of eczema will be given in detail.

Erythematous eczema.—Jacob recommends washing with diluted Goulard's extract (liquor plumbi subacetatis dilutus) or liquor aluminum acetate (Burrows's solution), 2 to 4 per cent, or with vinegar, three or four times daily. Linimentum calcis (carron oil) rubbed into the part three or four times daily, followed by the application of some drying powder such as starch, lycopodium, boric acid or kaolin, often works well.

As a rule lotions are borne better than ointments. They should consist of some agent in suspension, such as zinc oxide or other bland powder. Black lotion (lotio nigra) either alone or combined with equal parts of lime water is useful. If the skin is covered with scales zinc oxide ointment often does well.

Moist eczema.—Since there is no sharp line of demarcation between the different kinds of moist eczema, their treatment must be discussed as a whole. The main object of the treatment is to dry up the lesion and stop its spreading. All eczemas heal under a scab, and therefore the first thing to do is to facilitate the formation of a scab. Ointments do not do well because they will not adhere to the moist surface.

First clean up with boric acid solution, bran or starch water. Cut the hair from the lesion and for a short distance around it. Powders which dry up the secretions or agents which coagulate them may then be used. Among the former are the hydroscopic powders mentioned previously, and of the latter, astringents, either vegetable or mineral. We have used solutions more than powders. Salicylic and tannic acids in alcohol or 5 to 10 per cent silver nitrate work well. They are to be applied two or three times daily until a scab forms and the lesion stops spreading. Then the scab is softened and removed with a soothing ointment. As a rule the above-described treatment will be successful in from 5 to 10 days, the average being about a week. Numerous other agents may be used with similar action with equally good results.

Chronic eczema.—In chronic eczema stimulating remedies are indicated, to promote absorption of the infiltrate. Some preparations of tar, as oil of tar, cade or rusci, are of this class and may be used interchangeably, as they differ little if any in action. One of the above-mentioned agents may be incorporated with sulphur in ointments, lotions or paints, according to the preference of the practitioner.

Eczema of the ear.—The treatment for this type corresponds very closely to that for other types of moist eczema. The ear should be cleaned either with dry cotton on an applicator or by the use of water or hydrogen peroxide, and thoroughly dried. Mild cases do extremely well with daily dry cleaning followed by the instillation of one of the drying or soothing agents, such as boric acid, xeroform, thymol iodide, calomel, etc.

Serious diseased conditions with considerable ulceration require more vigorous treatment, such as the use of antiseptics and astringents, the same as in acute diffuse moist eczema. Indolent ulcers or exuberant granulations may be actively cauterized with silver nitrate stick or stronger solutions than those mentioned previously. This is painful and should be preceded by a local anesthetic; indeed it will be found advantageous in many cases to use these agents whenever the ear is painful, as it relieves the pain and consequently lessens the irritation from shaking the head. If shaking can not be controlled otherwise, a bandage or cap should be applied to prevent injury to the ears. Shaking, however, is not so severe in catarrhal otorrhea as in the parasitic form because it is much more painful.

PARASITIC DISEASES

Under the head of parasitic diseases I will include only sarcoptic mange, otodectic mange and follicular mange.

Sarcoptic Mange

In the dog the eruption most often begins upon the head, base of the ear, bridge of the nose, orbital rims and other thin-skinned parts such as the front of the chest and abdomen, and finally spreads over the whole animal. In the early stages the lesions consist of small papules which may change to vesicles or pustules. The diseased areas may be covered with profuse desquamation at first, later by a yellowish-gray scab. The hair falls out. Violent itching, which is increased by warmth, accompanies the eruption, and consequently the dog may change the character of the lesion by biting and scratching. There is a mouse-like odor when large areas are diseased. Animals frequently die from cachexia.

Sarcoptic mange in the cat usually begins on the ears and is confined to the immediate vicinity on the head, although the feet are sometimes involved and in one instance the tail was covered with crusts. It begins much like the corresponding mange in dogs, but appears to become scabby earlier. The skin soon becomes

wrinkled and covered with gray scabs. In bad cases the eyelids may be involved.

In the ferret the disease usually begins on the head and feet, although the lesions on the feet (foot rot) are often first noticed by the owner. Crusts form on the extremities, at the base of the nails and on the feet. Upon removal they leave a raw area. The nails grow extremely long and curved. A careful examination will show the entire body scabby.

Diagnosis.—Sarcoptic mange in the dog may be differentiated from follicular mange by its intense itching, easy transfer from one animal to another, greater accumulation of scurf, preference of the disease for the ears, lower chest, belly, elbows and inner thighs, and finally a microscopic examination will reveal the follicular mite.

From eczema it is distinguished by its contagiousness, by the itching, which is out of all proportion to the lesion, and by the fact that eczema responds more readily to treatment. The demonstration of the parasite is at times so difficult that, according to Friedberger and Frohner, any skin eruption accompanied by intense itching and other symptoms of the disease must be regarded as mange, although no parasite can be found. The lesions of the disease in ferrets and cats are so characteristic that no confusion seems likely to occur, and furthermore, the mites are easily demonstrated.

Treatment—Dogs.—The whole body must be treated to insure success. Long-haired animals should be clipped. The crusts may be removed with green soap and rubbing. As a rule remedies are best applied to one-third of the body daily, left on four or five days, then washed off, and the treatment started again the following day. Many remedies are useful: tar, cade, sulphur, or usually a combination of tar and sulphur in oil or fat. Cresol, lysol, balsam of Peru, etc., are also valuable. Washing or scrubbing in lime-sulphur solution or solution of liver of sulphur are often effective. Probably more depends upon the thoroughness of the application than of the parasiticide used.

Cats.—Clip the hair on the head and posterior to any lesion on the neck. Then apply any nonirritant parasiticide. Alkaline sulphur ointment, N. F., does nicely. Balsam of Peru is also excellent, although it is said to cause cerebral symptoms occasionally.

Ferrets.—Remove the crusts on feet and body. Cut and clean crusts from the nails. Many of the combinations of tar, sulphur and fat are effective.

Ear Mange (Parasitic Otorrhea)

The chief symptoms which lead one to suspect parasitic otorrhea are violent shaking of head, rubbing the ears on the ground or convenient object, whining and howling. The itching increases in the presence of warmth. Epileptic convulsions are not rare in cats, but we have not seen them in dogs. In some cases the mites cause itching only and do not in themselves cause any inflammation, the skin of the ear being sound in spite of a heavy infestation. If the ear be examined closely in these cases, a number of tiny white specks may sometimes be seen moving about. This is especially so in cats. Long neglected cases, however, usually end in baldness of the flaps of the ear, scratches or abrasions, and finally all the symptoms of catarrhal otorrhea. Many of those chronic sores on the ear flap accompanied by violent shaking of the head are due to parasitic otorrhea, although the inside of the ear appears in fair condition.

Diagnosis.—The disease may be distinguished from canker by the violent shaking of the head, dark brown discharge, being itchy instead of tender, and the presence of the mites, which may often be seen with the unaided eye or hand lens.

Treatment.—This is aimed directly at the parasites. Most of the parasiticides may be used. Jacob recommends 2 to 5 per cent solution of lysol in liquid petrolatum instilled in the ear for several days, after which they are to be cleaned. Glass advises 1 part of nitrate of mercury to 8 of almond oil. We have had fair success with 1 part of this ointment to 3 of lard, but the treatment must be persisted in for a considerable time in order to effect a cure. Caution should be used in applying sulphur and tar preparations, as they are occasionally too irritant. If the ear flap is injured it will probably be necessary to apply a cap or bandage in order to heal it.

Cats.—Parasitic otorrhea is a common disease of cats. It is easily diagnosed, as the parasites are more numerous and larger. The treatment is the same as that for dogs.

Rabbits.—The most prominent symptoms are severe itching, hanging of the ear, and the presence of yellowish-brown crusts or scabs that may completely fill the ear. This is probably the easiest mange to diagnose, as the mites are very numerous and large enough to be readily seen with the unaided eye. The treatment is the same as that given for other animals.

Follicular Mange (Acariasis)

Follicular mange is characterized by absence of itching, falling of the hair, with desquamation or pustule formation, and thickening of the skin caused by the *Demodex folliculorum*. It is generally classed as communicable, although Jacob claims it is not and puts stress on the proper condition of nutrition. It is certainly not easily transmitted, and on the contrary many cases are seen in which there has been no known contact. Some entire litters of puppies become infested at an early age, while the mother, so far as can be determined, remains entirely sound. The larger number of cases occur in short-haired dogs.

Two forms are commonly described, the pustular and the squamous. The pustular may follow the squamous or be present from the start. When encountered there is little chance of missing a diagnosis. We see the firm nodules followed by pustules, usually beginning on the thin-haired parts and then spreading to other parts. The contents of the pustules are either a blood-stained pus or a thick, yellowish mass in which it is easy to distinguish the parasites. The skin of the affected part assumes a copper red color.

Squamous form.—This, as the name implies, is a squamous eczema. It usually remains for some time with little tendency to spread. Favorite seats are the orbits, spreading to the face, elbows, under side of neck, or even isolated small spots on different parts of the body, from which the hair falls. The skin is at first a copper red color and covered with fine scales, but after a time becomes lead gray. In other cases there is simply a baldness with such a perfect skin as to indicate only a light form of squamous eczema. The disease in these cases may be localized on the under side of the neck and only be suggestive of rubbing with the collar and wearing of the hair, or may be upon the side of the face, on or around the eyes, or in spots on different parts of the body. They show no signs of inflammation or change in color of the skin, do not itch, and in fact manifest themselves only by a loss of hair; and yet if a microscopic examination of the scrapings be made numerous parasites will be found.

Diagnosis.—The pustular type of the disease is so characteristic as to be easily diagnosed. The copper red color, thickened skin, pustules bluish red in color and containing a thick bloody pus make diagnosis easy. In doubtful cases the contents of a pustule examined under the low power will quickly check the diagnosis.

The squamous form is not so easily diagnosed. Some suspicion may be gained by the loss of hair with slight or no itching, but a positive conclusion can be reached only after a microscopic examination, as some of the atypical types which are often diagnosed as squamous eczema can be differentiated in no other way. Furthermore the prognosis of follicular mange is so dubious that one should always incriminate the acarus mite in suspicious cases until its absence can be determined.

Treatment.—The treatment is most unsatisfactory, as might be surmised from the long list of remedies which have been used and recommended at one time and another. Jacob appears to give proper food and hygienic conditions more prominence in the treatment than drugs, but we have not been successful in carrying out his line of treatment. Many cases recover after a time, and many do not, and even for a recovery considerable time is required.

For the squamous type tincture of iodine often does well. It should be rubbed fairly well into the skin daily until desquamation is profuse, then omitted for a few days. Nitrate of mercury ointment 1 part to lard 3 parts also will succeed in some cases. Our plan is to apply to one-third of the body daily until covered, then rub each day for three or four days, wash with soap, and repeat.

The other agents recommended for the treatment of sarcoptic mange in the dog may be adopted. Bacterins were advised at one time for the treatment of follicular mange, but have not given the success in our hands that would warrant their use, perhaps because each case upon which we used them was positively diagnosed as mange.

DISCUSSION

CHAIRMAN BEMIS: Are there any questions you would like to ask Dr. Milks on skin diseases?

DR. BOYD: I believe the Doctor said something about prognosis, but I don't believe he touched upon the prognosis in cats, and mange in cats.

DR. MILKS: Unless you have a very badly affected case, the prognosis ought to be good.

DR. FERGUSON: In those moist cases of eczema where the dog scratches a whole lot and where they are very hard to control, have you ever tried formaldehyde?

DR. MILKS: No.

DR. FERGUSON: I have had some good results in those cases, where it was impossible to keep the dog from scratching, where they would scratch the side of the face until it was like beefsteak. I could strap the ears and face up and the next day the wound would be suppurating. Take a case like that and wash it with soap and water and wash it with a solution of

3 or 4 per cent of formaldehyde and it will stop the itching. One application will not. It may be two or three days, but it will dry up the parts and stop the itching, and if you follow that up with a little sulphur ointment those cases will do remarkably well. Those are about the meanest cases in the dog that I have to treat, because the most trouble is to take care of them, and this way of handling them has been very satisfactory to me.

This is the way I got on to that treatment: One of my boys has that same trouble, that eczematous condition of the flexure of his knee, especially in the summer time when he goes in swimming, and we have tried different remedies, and were unable to control it until we tried several applications of the formaldehyde solution, and that has controlled it very nicely.

DR. MILLER: I would like to say one word in regard to follicular mange. When it comes to shaking the thing right down to the bottom, I don't believe that there is a drug in the Pharmacopeia that will cure follicular mange. I believe those things are evolved out. For instance, take Bruner's remarkable table of the tenacity of the life of these parasites. I think he estimated they would live for 85 minutes in oil. You know you can't treat a dog for 85 minutes.

The young parasites are animals with three legs. The fourth is only developed at a last stage. When you treat those things over a series of weeks—that is what it means to treat them successfully—you will find that several things take place. You will find the contour of the parasites changing. Instead of having long bodies, they will become more stumpy. You will find them more pigmentary; a yellow pigmentary condition of the bodies precedes their demise, or they have all been put out and you search in vain. When you treat those with balsam, it is most difficult to locate the young parasites. I believe you can take that table of Bruner's as an index of what they will stand, in the laboratory, from the fact that you cannot find young parasites. Long before that, you will have ceased to find young parasites with three limbs. I think I am safe in saying that those things are evolved out and not cured.

DR. BRUNER: I would like to ask the Doctor what results he has obtained with the use of bacterins.

DR. MILKS: I have had several cases of vesicular mange. That is where it was absolutely from the parasite. We never had any luck at all.

DR. ANTHONY: I would like to ask the Doctor when a mange case is cured and leaves the hospital and goes back to its home what he does and what procedure he uses to keep the dog from returning to him infected in a few weeks with mange.

DR. MILKS: We haven't any special proceeding. You would have to burn up a man's home to get it disinfected. The best we can do is to do the same as when they came to us first. We can't disinfect the man's home.

DR. MERILLAT: I think the experience of Professor Henry during the war has shown that the carrying of parasites is not very successful, that they do not live off the body of animals more than fifteen days. That is a basis upon which to work in disinfecting homes. We concluded that in the Army. If we went into places that had just been evacuated, they

were the infected places, whereas if we went into barracks that had been abandoned for a long while, our animals never contracted mange, proving that the extraneous life of the parasite was most precarious.

DR. FLYNN: I think I find that my greatest trouble is with reinfection; the animal going home becomes reinfected. I always advise the owner to be careful where he houses the animal. Those parasites are in the rugs, floors, and in the kennel, and I always tell the owner to provide an absolutely clean place and to disinfect his place and send the rugs to the cleaner. I think the thing is easily controlled if proper measures are used.

DR. MILKS: I find in a case like follicular mange you are obliged to use such good treatment that you don't get a case of reinfection for a number of years, because that dog lives through a good brisk exposure.

DR. MERILLAT: The dog is usually so thoroughly impregnated with parasiticide that the parasites will seek another dog rather than that one. We have very few cases of reinfection, so few that we don't need to consider them at all.

Dr. J. H. Oyler, No. 110 South 13th Street, Harrisburg, Pa., who has been conducting a general practice of veterinary medicine in Harrisburg for the past 35 years, finds that on account of his failing health he can no longer do justice to his patrons, and announces his practice and equipment for sale. His successor should be a general practitioner especially well trained in the treatment and surgery of small animals and can be assured of Dr. Oyler's help in establishing himself.

Dr. A. A. Leibold, who has been holding the position of Director of Laboratories with the Eagle Serum Company, is now associated with the Zell-Straub Laboratories, in Chicago.

"The accredited-herd plan, by which owners of tuberculosis-free herds receive State and Federal recognition, has met the approbation of breeders of cattle all over the United States."—*Iowa Homestead.*

Twenty-five dairy cows driven across the Maryland-York county line in violation of the interstate cattle law were quarantined and inspected by agents of the Bureau of Animal Industry of the Pennsylvania Department of Agriculture, and 36 per cent of the cows were found to be so badly diseased that they were condemned for fertilizer. The State line is being closely watched by State officials in coöperation with the Federal Department of Agriculture.—*Pennsylvania Grange.*

THE DIAGNOSIS, THERAPEUTICS AND PROPHYLAXIS OF CHICKEN-POX (CONTAGIOUS EPITHELIOMA) OF FOWLS[1]

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THE relationship between the various pathological conditions of the head of domesticated fowls has been the subject of much controversy. These conditions are variously designated as chicken-pox, contagious epithelioma, avian diphtheria, canker, colds, contagious catarrh, swelled head, roup, etc. Ward and Gallagher (1) in their recently published work, "Diseases of Domesticated Birds," express the opinion that all of these conditions are due to the same etiological factor, namely, "the filterable virus of chicken-pox or contagious epithelioma." The results of extensive study of these diseases at the California Agricultural Experiment Station, however, have led us to the conclusion that, as they occur in California, there is a distinct difference between some of them.

CLASSIFICATION OF DISEASES INVOLVING THE SKIN OR MUCOUS MEMBRANE OF THE HEAD

In order that there may be no misunderstanding of the nomenclature of lesions or diseases used in this discussion, I will give briefly our conception of them.

Chicken-pox or contagious epithelioma is a readily transmissible disease manifested by the formation of small wart-like epithelial tumors on the comb, wattles, or skin of the head. The sole etiological factor of this disease is accepted to be the filterable virus of contagious epithelioma.

Canker or avian diphtheria is manifested by the formation of masses of adherent, cheesy exudate on the mucous membrane of the mouth or eyes. These diphtheritic lesions should not be regarded as evidence of a specific infectious disease, since factors other than the filterable virus of contagious epithelioma are known sometimes to produce them.

Colds, catarrh and roup are manifested by a viscid discharge from one or both nostrils, which has a tendency to collect in the nasal sinuses, where it undergoes rapid transformation into a cheesy mass,

[1] Presented at the Fifty-seventh Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920.

causing marked swelling of the face beneath the eyes. Such lesions, as in the case of canker, are believed to be due to a variety of causes.

There is abundant evidence, both clinical and experimental, to indicate that chicken-pox and the most common form of canker are etiologically identical. Diphtheritic lesions in the mouth or eyes can be produced by intravenous or subcutaneous inoculation with a suspension of finely ground chicken-pox virus derived from scabs removed from the tumors on the skin of diseased birds, or by applying the virus to a scarified surface on the comb. In like manner typical chicken-pox lesions may be produced by inoculation of the comb with material from mucous membrane lesions. A vaccine prepared from desiccated chicken-pox scabs affords protection against canker as well as chicken-pox. In outbreaks of chicken-pox the number of affected fowls with canker of the mouth or eyes only may be as high as 60 per cent.

However, as above stated, not all cases of canker can be regarded as due to chicken-pox virus. We recognize at least three distinct forms, which for convenience we classify as *chicken-pox canker*, *mechanical canker*, and *malignant canker*.

Mechanical canker is produced by injury to the mucous membrane. It commonly occurs in the cleft in the hard palate and in the inner corner of the eye as a result of a particle of litter or a kernel of grain becoming lodged there. Removal of the cause results in prompt recovery.

Malignant canker is so classified on account of its nature. It commonly occurs on the base of the tongue or the side of the larynx, penetrates deeply into the tissue, does not respond to any treatment so far attempted, is accompanied by general symptoms such as depression, loss of appetite, and rapid emaciation, and practically always terminates fatally. However, since it is of rather rare occurrence and has shown no tendency to spread from diseased to healthy fowls in the same flock, it is not as yet of much economic importance. Since chicken-pox is the subject to be discussed, when the term "canker" is used hereafter in this paper it will refer only to "chicken-pox canker."

We have found little to indicate that there is any relationship between chicken-pox and roup, but instead, considerable evidence that they are not, as a rule, in any way related. A nasal discharge is so infrequently associated with canker, especially in the early stages, that it would seem there is little ground for considering this

an indication of chicken-pox or canker when it does occur. Even in very severe advanced stages of canker the nasal passages are not necessarily involved. On the other hand, it is extremely rare to find canker of the eyes or mouth accompanying roup. Even though the sinuses may be so distended as to cause the eyes to become closed, as a rule no cheesy material is formed in them. It has been frequently observed that birds that have had chicken-pox are not rendered immune to roup, and that birds that have had roup are not immunized against chicken-pox. It is very probable that there are always a few cases of roup present in all large flocks, no matter how well they may be housed and cared for, but we have yet to observe an epidemic of roup in any flock in California that was given proper care. Chicken-pox and canker are just as liable to attack a well-cared-for flock as one poorly cared for. Therefore we do not consider roup to be related to chicken-pox, to be a specific infectious disease, nor a menace to successful poultry raising.

A Malnutritional Disease Resembling Roup.—There have occurred during the past two years epizoötics of a disease involving the mucous membrane of the mouth, pharynx, eyes, and the nasal passages which closely simulates roup, but which has been found to be entirely distinct. In the mouth and pharynx we find pustule-like caseous patches 1 to 2 mm. in diameter. On pressure we find that the caseous material penetrates quite deeply into the mucosa. These may be so numerous as to give the mucosa, especially of the pharynx, the appearance of being covered with caseous false membrane. These pustules are often found in the mucosa of the esophagus as far as the proventriculus. We also frequently find the cleft in the hard palate and the glottis filled with caseous exudate. In the eyes we find first a thin, viscid discharge which may glue the eyelids together, then the formation of a tightly adherent, white, membranous film over the membrana nictitans, and finally the collection in the conjunctival sacs of white, cheesy exudate. There is usually a clear, viscid discharge from one or both nostrils which later may become turbid and flocculent and be followed by swelling of the infraorbital sinus. On postmortem examination of dead birds we usually find the kidneys severely involved. They are usually very pale and marked with a network of very fine white lines which are urate-filled tubules. We also frequently find a deposit of white material, probably urates, on the liver, heart and other organs.

The results of our study of this disease have led to the belief that, although it frequently affects large numbers in the same flock, it is

not of an infectious nature, but rather due to some nutritional disturbance. This belief was arrived at after failure to transmit the disease from diseased to healthy birds or to find any species of bacteria which appeared to be a causative factor, and success in controlling and reproducing the disease by certain methods of feeding. This disease is always mistaken for roup by poultrymen, and it is very possible that many so-called "outbreaks of roup" have in reality been this nutritional disease.

THERAPEUTICS OF CHICKEN-POX

In the treatment of chicken-pox and canker we have found that the administration of chicken-pox vaccine is a valuable adjunct to other remedial measures. The scabs from the pox tumors and the caseous exudate from the mouth or eyes are removed with forceps. Tincture of iodine is then applied with a medicine dropper. This treatment is repeated at 2 or 3 day intervals as long as necessary. Except in very severe cases not more than two or three treatments are necessary. In addition, two or more 1 or 2 mil doses of chicken-pox vaccine at 3 to 5 day intervals are given.

In experiments to determine the curative value of chicken-pox vaccine 536 diseased fowls were used. They were divided into two lots of 268 each. In order that there might be a nearly equal number of fowls in each lot with lesions of the same type and degree of severity, the location and severity of the lesions were the basis upon which the selection of the birds for each lot was made. Each bird in one lot was given two 1-mil doses of vaccine, in addition to local treatment of the lesions, while the birds in the other lot received local treatment of the lesions only. The percentage of mortality of fowls in the lot receiving vaccine was 19.6 and of those in the lot not vaccinated 38.9. The average number of days required for recovery of the fowls vaccinated was 10.8; of those not vaccinated, 13.7. From these results it would appear that the use of vaccine is of considerable value in the treatment of chicken-pox and canker.

PREVENTION BY VACCINATION

It is for prevention rather than cure, however, that chicken-pox vaccine is designed and chiefly used. The first vaccine experiments in California were made in 1914. The results obtained were so satisfactory that the vaccine was recommended for use to commercial poultrymen. It was only natural that at first many poultrymen were skeptical of the value of vaccination. Continued good results, how-

ever, soon dispelled this skepticism, and at present in California the use of chicken-pox vaccine by poultrymen is as general as the use of blackleg and anthrax vaccine by cattle raisers in infected districts. During the fiscal year ending June 30, 1920, the California Agricultural Experiment Station furnished vaccine for over 300,000 birds.

Propagation of the Virus

The method used in preparing vaccine is a development of that used by Manteufel (2) in 1909 and Hadley and Beach (3) in 1912-13. Scabs removed from chicken-pox lesions are the source of virus used in preparing vaccine. The virus is propagated by inoculating the combs of healthy cockerels with a suspension, in sterile water, of dried ground scabs. Only scabs from the comb are used, any lesions developing upon the mucous membranes being discarded.

The inoculation is made by moistening one side of the comb with the suspension of ground scabs, then vigorously scarifying the entire surface with a large, dull hypodermic needle or other instrument, and then moistening the scarified surface with the suspension of scabs. This process is repeated on the other side of the comb. Care is taken that none of the virus comes in contact with the mucous membrane of the eye. Lesions appear in five to seven days and develop sufficiently to permit the removal of scabs in two to three weeks. A second growth of scabs can be removed seven to ten days later. The percentage of mortality of the inoculated birds ranges from 50 to 100 per cent, the greatest loss usually occurring soon after the first growth of scabs is removed.

After removal the scabs are thoroughly dried and reduced to a fine powder by grinding in a small coffee mill and then in a ball mill for 24 to 48 hours. This powdered virus, if perfectly dry, will keep for months, and may be stored in sterile bottles until needed in preparing vaccine. High potency of the virus is maintained by keeping fowls constantly inoculated and using for inoculation purposes fresh dried scabs from severe cases, and by occasionally procuring new strains of virus from naturally infected birds.

Method of Preparing the Vaccine

One gram of the powdered desiccated virus to 100 mils of physiological salt solution is the proportion used in making vaccine. This proportion was adopted after making numerous trials with varying amounts of virus. Aseptic precautions are observed. The virus is

first weighed out and placed in a sterile mortar with a sufficient amount of sterile salt solution to make a paste, and is ground for at least five minutes or until the mixture acquires a smooth, cream-like consistency. Four or five mils of sterile salt solution to each gram of virus is required for this purpose. To this mixture is then added sufficient sterile salt solution to bring the volume up to 80 mils. It is then poured into a sterile flask or bottle, placed in a water bath and heated at a constant temperature of 55° C. for an hour. It is then filtered through sterile cheese-cloth into a sterile flask or bottle, and to it is added 20 mils of sterile salt solution containing 1 per cent of tricresol, which mixture is poured through the filter so as to wash out as much of the pulverized material as possible. After cooling in running water or ice water until the temperature is below 7° C. the vaccine is ready for transfer to the ultimate containers, which are sterile bottles of amber or other dark glass.

The vaccine may retain its potency for more than a month after preparation, and on the other hand it may become less effective within two weeks. Therefore vaccine should be used as soon after preparation as possible.

Efforts to Standardize the Vaccine

Our experiments have shown that the immunizing value of vaccine varies directly as the virulence of the virus contained therein. Since there is a variance in the virulence of different lots of virus, there is necessarily a variance between different lots of vaccine. Thus far all attempts to devise a method of standardizing the virus in vaccine have proved unsuccessful. These have included the complement-fixation test, inoculation of fowls with vaccine by scarification of the comb, and the intracutaneous injection of vaccine. The complement-fixation test proved to be entirely inapplicable. Vaccine capable of producing marked lesions on fowls inoculated by scarification of the comb produced a higher degree of immunity in fowls vaccinated than vaccine capable of producing only mild lesions. At present, however, it is not possible to determine by observing the lesions produced on fowls inoculated with vaccine the degree of immunity it may be expected to produce in fowls vaccinated. The intracutaneous injection of vaccine gave no determinative reaction.

Efforts to Improve the Vaccine

Various attempts were also made to increase the efficiency of the vaccine by improving the method of preparation. The use of

glycerine in the preparation of vaccine did not produce a more satisfactory product. Vaccine prepared in the usual manner, but not heated, proved to be an efficient immunizing agent, but it also produced disease in more than 50 per cent of fowls vaccinated. For this reason such vaccine can not be used. A shake extract of powdered virus was found to be an efficient immunizing agent when fresh, but it did not retain this property sufficiently long to make such a lengthy method of preparation practicable. Powdered virus made in the form of "pills" and given subcutaneously conferred no immunity. The intracutaneous injection in the wattle of 1/10-mil doses of regular or shake-extract vaccine proved to be a very efficient means of immunization. However, the development of lesions at the injection point and elsewhere about the head, and areas of induration at the injection point in the wattle, make this method both dangerous and objectionable.

Method of Administration

The vaccine is administered subcutaneously. The dose is 1 mil for each bird. The most convenient place for administration is beneath the skin of the breast under the right thigh, the skin at that point being comparatively free from feathers. Special precautions must be taken that the vaccine is injected *subcutaneously*, not *intramuscularly*. The bird may be held either by the operator or by an assistant.

When the operator holds the bird the left wing is held back, the fowl is laid on its left side, and the right wing and leg and feathers are held back with the last three fingers of the left hand. The exposed skin is then cleansed with a piece of cotton saturated with disinfectant solution (2 per cent solution of compound solution of cresol), and picked up with the thumb and forefinger of the left hand. Then with the right hand the syringe needle is inserted *just beneath the skin* and the proper dose injected. With a little practice one man with an assistant to catch the birds can vaccinate from 100 to 150 per hour.

When an assistant holds the bird, both wings are grasped with the left hand and both legs with the right hand. The bird is then laid on its left side with the breast toward the operator. The operator, standing a little to the rear of the bird, cleanses the skin at the point of injection, picks it up with the thumb and forefinger of the left hand, and with the right hand inserts the syringe needle *just beneath the skin* and injects the vaccine. By this method a man

with two assistants to catch and hold the birds can vaccinate from 200 to 300 per hour.

A syringe of 6 to 12 mils capacity is well suited for this work. The needle should be 16 to 18 gauge and from 1½ to 2 inches over all in length. A screw needle is preferable.

One treatment is usually sufficient in healthy or slightly infected flocks. In badly infected flocks a second treatment for all birds is advised. In very severe outbreaks the injections should be continued at intervals of 5 to 7 days until the disease ceases to spread.

THE PROTECTIVE VALUE OF CHICKEN-POX VACCINE

We have found that partial or nearly complete protection against severe artificial infection with chicken-pox virus may develop in 2 to 6 weeks after vaccination. Some lots of vaccine afford nearly complete protection against severe artificial infection 30 days after vaccination, while with other lots the protection is less marked, and with still other lots very slight. The amount of protection afforded was measured in all cases by comparing any lesions on vaccinated birds produced by the inoculation with those produced on an equal number of non-vaccinated control birds inoculated with the same virus. This variation in the protection afforded by different lots of vaccine is explained by the previously mentioned variation in virulence of different lots of virus.

It would seem very probable, however, that the resistance to artificial infection produced by the vaccine is sufficient to protect against natural infection, which could not be as severe as the artificial infection. A series of experiments were conducted in which an aggregate of 1,298 birds were used, 272 of which were naturally infected with chicken-pox. Nine hundred healthy fowls were vaccinated and 126 healthy fowls were not vaccinated. None of the diseased fowls were removed from the flocks after vaccination, thus affording every opportunity for the then healthy fowls to become infected. It was positively known that none of the healthy fowls had been previously infected with chicken-pox. All the fowls were leg-banded and therefore an accurate record of the condition of each fowl could be kept. Frequent examination of each fowl showed the following: Of the vaccinated healthy fowls 11 per cent subsequently became diseased, while of the non-vaccinated healthy fowls 86 per cent subsequently became diseased. Such results seem to us exceedingly good evidence of the protective value of chicken-pox vaccine against natural infection.

The results of experiments to determine the length of the immunity have indicated that it may vary from 9 months to more than 2 years. Field observations show, however, that the immunity may last no longer than 2 or 3 months. On account of the uncertainty in regard to the longevity of the immunity produced, it is recommended that flocks be vaccinated only to prevent the spread of infection already present, and not for the purpose of immunizing them against subsequent infection.

CONCLUSIONS

In concluding this discussion it is desired to emphasize the following points:

1. As they exist in California, there does not appear to be any etiological relationship between chicken-pox and those pathological conditions of the nasal passages commonly designated as colds, roup, or swelled head.

2. Many so-called outbreaks of roup may in reality be a disease manifested by symptoms very similar to roup but due to nutritional factors.

3. There appears to be ample evidence that chicken-pox and those pathological conditions of the mucous membranes of the mouth and eyes commonly designated as canker or avian diphtheria are etiologically identical.

4. Vaccine prepared from desiccated chicken-pox virus, while not conferring, in the majority of cases, complete protection against severe artificial infection, does confer a considerable degree of resistance. This is shown by the mildness of lesions produced by inoculating vaccinated birds with virus as compared with those produced on non-vaccinated control birds.

5. Chicken-pox vaccine has proved to have considerable curative value when used on diseased birds.

6. Chicken-pox vaccine has proved a very effective means of promptly checking outbreaks of chicken-pox and canker. The use of this product has become very general among poultrymen of California.

7. The length of immunity produced by chicken-pox vaccine may vary from two months to more than two years. For this reason the vaccine is recommended only to check the spread of the disease in flocks already infected.

8. The efficiency of chicken-pox vaccine is dependent upon the degree of virulence of the virus contained in it. Since there is con-

siderable variation in the virulence of different lots of virus and there is at present no method of standardizing the virulence of virus, there is necessarily considerable variation in different lots of vaccine.

9. It is realized that the present method of preparing chicken-pox vaccine is very imperfect. Thus far, however, all efforts to devise a better method have proved failures.

REFERENCES

1. Ward and Gallagher. Diseases of Domesticated Birds. The Macmillan Co., 1920.
2. Manteufel. Arb. d. Kaiserl. Gesundh., XXXIII (1910), 305.
3. Hadley and Beach. Proc. Am. Vet. Med. Assn., 1913, p. 704.

DISCUSSION

DR. REICHEL: Has an opportunity been afforded to study the relationship between chicken-pox and human chicken-pox?

DR. HADLEY: I had intended to open the discussion on this paper, as there is interest in this subject. We were interested seven years ago in immunizing against the disease among fowls. In our earlier work we had no standardized method as Dr. Beach has outlined. One reason is that we did not work at the problem as he has. One reason is that chicken-pox has become less prevalent. In California, where conditions seem to be suited to raising larger flocks than in this part of the country, it is gratifying to know that the University of California succeeded in enlisting Dr. Beach's gifts in this work, and the Veterinary Association should feel complimented in having such a discussion.

No one who does not know the disease knows how difficult it is to prepare immunizing products. Chickens are quite different from animals like horses, cattle, sheep and hogs. This makes the problem more difficult than with the animals just mentioned.

One point I would like to urge upon the members of this organization who have chicken diseases to deal with. Although this vaccine is not available from commercial firms, I am sure in most States where veterinary laboratories are maintained by the State, the State will be very glad to prepare the vaccine.

Another point interests me, and that is that Dr. Beach has differentiated from roup on the one hand and chicken-pox and those diseases which have lesions very similar to roup which will not respond to the same treatment.

CHAIRMAN DAY: Dr. Beach may answer Dr. Reichel's question.

DR. BEACH: In our attempt to go over the literature on the subject, we find that a tremendous amount of study of the nature of this virus and its relationship to similar diseases in other animals has been gone into, and so far it is found that no other animal and not even some birds are susceptible to this.

CHAIRMAN DAY: We have a written discussion on this paper sent here by Dr. Archibald R. Ward, and the Secretary has looked it over. Shall we have it read or just printed in the proceedings?

(A motion prevailed that Dr. Ward's discussion be read by title and printed.)

DR. WARD: The discussion of the valuable paper by Dr. Beach is undertaken with satisfaction, for I have an intense personal interest in the subject. I feel also that his opportunities and experience in the study of this perplexing group of exudative diseases of the fowl's head, together with his scientific attitude, entitle him to high rank as an authority on the subject.

I am further glad to discuss the subject in order to correct a misapprehension on the part of Dr. Beach regarding views expressed by Dr. Gallagher and myself in our book on "Diseases of Domesticated Birds." I alone, however, am responsible for the subject matter in the book relating to avian diphtheria and bird pox. The paper just read contains a reference to our views as follows:

"These conditions are variously designated as chicken-pox, contagious epithelioma, avian diphtheria, canker, colds, contagious catarrh, swelled head, roup, etc. Ward and Gallagher in their recently published work express the opinion that all of these conditions are due to the same etiological factor, namely, the filterable virus of chicken pox or contagious epithelioma."

On critical scrutiny of the chapter on Avian Diphtheria and Bird Pox, I am unable to locate such a statement. In the opening paragraph of the chapter a somewhat similar list of pathological conditions was given, and was referred to as presenting a complicated subject for discussion, without, however, referring to etiology.

Elsewhere I took occasion to question the validity of differentiating into separate disease entities such conditions as simple catarrh, common colds, contagious catarrh, influenza and coryza, inclining to the view that the conditions mentioned are indistinguishable from early cases of avian diphtheria due to pox virus. It was pointed out that insufficient etiological evidence is available to justify recognizing such conditions as specific infectious diseases. If it is indisputably true that pox virus seldom or never causes a fluid exudate in nostrils or conjunctival sacs, the view given regarding this symptom is inaccurate.

In an attempt to put in the book only that which appeared to be known in contradistinction to that which is as yet uncertain we discussed only two diseases, namely, avian diphtheria and bird pox caused by pox virus and the condition designated simple catarrh or cold manifested by a watery or viscid discharge.

The literature of the subject available and my personal observations did not permit me to go further in introducing well-defined diseases recognizable by etiological agent, nor did this standard justify including simple catarrh. However, this conservative attitude in including diseases was not intended to justify the conclusion that I believe that research had gone far enough to conclude that pox virus is the cause of all exudative conditions on the mucosa of the fowl's head. Quite the contrary view was held. I introduced several paragraphs to present views concerning the importance of hemorrhagic septicemic organisms, and observed that—

"Whether there are other specific infectious diseases of fowls characterized by diphtheritic lesions not due to pox virus remains to be deter-

mined by further investigation. The idea has been advanced that diphtheritic lesions of the mucosa of the head of the fowl may result from invasion by various bacteria."

Dr. Beach has given a keen analysis of the clinical differentiation of these conditions, and it is the best that has yet appeared. In recognition of conditions confidently believed not to be due to pox virus he has made a great advance, and it is believed that his further studies will completely elucidate the etiological problem. In view of the occasional failures of chicken-pox vaccine to protect, great caution should be taken in assuming that a diphtheritic exudate on a bird supposedly immune to pox is really due to another agent. I should like to see a piece of work done on the pathological histology of diphtheritic exudates made in connection with the study of etiology. Much of the work on these exudates has been done by bacteriologists ignoring the influence of pox virus and by men working with pox virus while ignoring possible etiological agents among the bacteria or other organisms. Dr. Beach is not subject to these limitations.

I note with satisfaction the progress of the elucidation of this problem. Some fifteen years ago I made, I believe, the first observation that virus from some diphtheritic lesions may cause a pox lesion on inoculation, and reported the same before a meeting of this Association. The first experiment performed revealed other cases which did not reproduce pox on inoculation, which may be interpreted as indicating a variety of etiological agents in diphtheritic lesions.

Dr. Beach's tests of the therapeutic and prophylactic value of chicken-pox vaccine are to be commended as models of the correct procedure to be followed in passing judgment on the value of a biological product. Only when equal numbers of individuals are treated and untreated, and left to natural exposure, can a safe judgment be passed on the value of a product.

We are indebted to Dr. Beach and to Dr. Haring for the steady prosecution of this important work, yielding such valuable results for the benefit of the poultry industry.

Dr. S. E. Bennett, of the Executive Board of the A. V. M. A., made a hasty visit to Washington early in November en route for the South, where he will make a study of the stockyard conditions in that section.

Dean W. Horace Hoskins, of the New York State Veterinary College of New York University, was appointed a member of the Veterinary Council of the Board of Regents at their annual convocation, on October 7 and 8.

G. Arthur Bell, for many years Senior Animal Husbandman in the Bureau of Animal Industry, has recently resigned his position to accept a place in the War Department at $5,000 per annum to assist in the work of breeding horses for the cavalry which that Department is inaugurating.

CLINICAL AND CASE REPORTS

HYDRANGEA POISONING

By E. A. BRUCE, *Agassiz, British Columbia*

PAMMEL states that hydrocyanic acid occurs in the well-known ornamental plant *Hydrangea hortensia.* The root of the wild hydrangea (seven barks), *H. arborescens,* of the United States of America, has diuretic properties and is said to have been much used by the Cherokees and early settlers in calculous complaints (Alice Henkel). The root of *H. arborescens* contains about 1 per cent of a glucoside, hydrangin, also a volatile oil, resin and starch. It probably also contains a saponin. A glucoside, parahydrangin, is also present in the root of the arborescent hydrangea (*H. paniculata grandiflora*), a variety extensively cultivated (Kraemer). No references to poisoning by hydrangea appear in the literature.

I am indebted to A. J. Damman, D. V. S., of Vancouver, B. C., for information regarding cases of poisoning in a horse and a cow. Confirmation of the toxic action of hydrangea was obtained when an extract was fed to guinea-pigs.

DR. DAMMAN'S CASE

On July 28, 1919, was called to see an animal belonging to a Chinese peddler in the city of Vancouver, B. C. About 4 p. m. found a black horse, 9 years of age, weight about 1,475 pounds, standing with his head down and with his tail twisted to one side. The animal was pawing with the front feet and showing a profuse diarrhea. Except when the tail was raised to let out a stream of liquid feces it was held in close to the body, but the point of the tail was twisted to one side all the time. The abdominal muscles were drawn very tightly. At times the animal would attempt to lie down, but would only bend its legs and then straighten up. At such times it would squeal and jump up stiff-legged like a goat on all four feet. Temperature 103, respiration 45, pulse 105. A peculiar stare of the eyes was also noted.

Upon inquiry the Chinaman stated that the horse had eaten and drunk as usual at noon, but that about 11 o'clock that morning it had eaten a woman's potted plant. Dr. Damman then accompanied the Chinaman to the woman's house, where a hydrangea (subsequently identified as *H. hortensia* var. *otaska*) was found to have been eaten. Upon returning the horse was found in the same posi-

tion, but was now passing blood and mucus with its liquid feces. At 6.30 p. m. the following drench was given: Oil of turpentine 3 ounces, tincture of ginger 1½ ounces, tincture of capsicum 3 drams, raw linseed oil to make 29 ounces.

The animal was seen at 9.30 p. m. The abdominal muscles had relaxed, the staring gaze had gone, and the animal seemed to suffer less pain. At 9.30 the following morning the horse was much improved; temperature 100.4, respiration 20, pulse 45. The case was discharged at 6 p. m. that evening, the horse having drunk some water and eaten a carrot and some hay.

The hydrangea implicated in this case was about 2½ feet high and 30 inches across. Dr. Damman estimated the weight at 15 pounds and the amount eaten at 6 to 8 pounds. All the leaves and blooms had been eaten, but very little of the stems. Personally I should judge the weights given as being 50 per cent too high.

In October Dr. Damman informed me that he had recently had an inquiry over the telephone about a cow that had eaten hydrangea. The owner said she had signs of colic and was very short of breath. As this cow was some distance away, treatment was prescribed over the telephone. The following day the owner telephoned that she was much better but had diarrhea. No further information is available regarding this case.

EXPERIMENT

About 3½ ounces of *Hydrangea hortensia* var. *otaska*, consisting of two large flowering heads, ten leaves and a few inches of stem, were macerated in cold alcohol for several days. The alcohol was then allowed to evaporate, about one teaspoonful of a sticky brownish extract resulting.

October 21 at 3 p. m. two guinea-pigs were given the extract by means of a small wooden spatula; had great difficulty in getting them to swallow it, each animal getting only about one-quarter of a teaspoonful. One pig was much larger than the other. Fed as usual after dosing. October 22, 11.30 a. m., the smaller guinea-pig shows diarrhea; keeps humped up in a corner of cage, shivers. Larger pig also quiet and humped up. Both animals have hair standing on end as if cold. Diarrhea of smaller animal well marked.

Killed smaller guinea-pig at 4 p. m. Stomach half full of food, greenish on side next to stomach wall. Pyloric end of stomach very much inflamed. Intestines full of a thin, yellowish, gaseous fluid, and show inflammation, but to a less extent than the stomach.

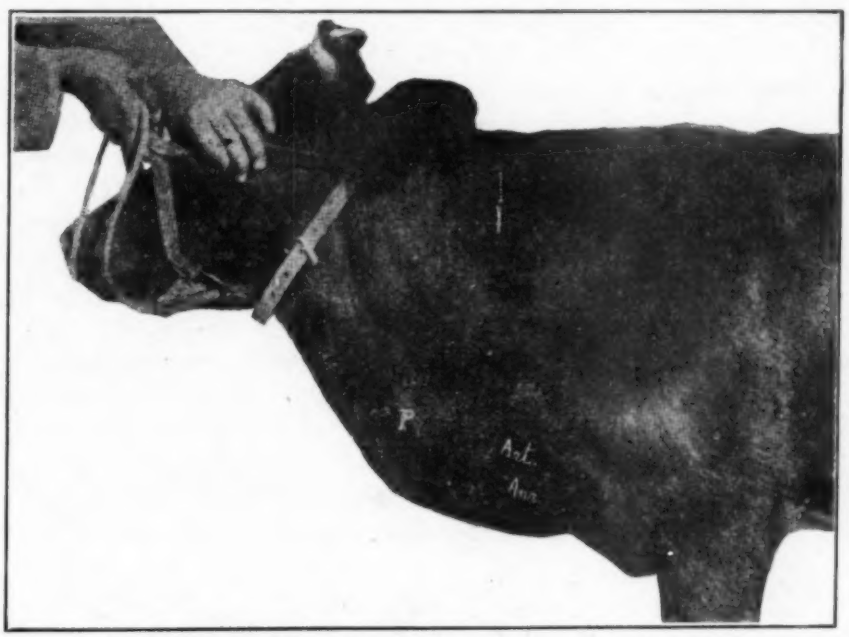
October 23, larger guinea-pig still humped up and quiet. No diarrhea. Killed. Some congestion around the pyloric end of stomach and duodenum. Intestines contain some gaseous fluid, but to a less extent than did the smaller animal. Probably did not get as large a dose as the other, besides being a bigger animal.

CONCLUSION

The peculiar symptoms seen in a horse a few hours after eating the aerial parts of hydrangea, and the reported case in a cow, together with the well-marked irritation of the alimentary tract of guinea-pigs after ingesting small doses of green extract, point to hydrangea as a plant possessing strong toxic properties.

TWO CASES OF CERVICAL ECTOPIA OF THE HEART IN BOVINES

In *La Prensa Médica Argentina* of August 20, 1920, Drs. B. A. Houssay, professor of physiology of the Faculty of Medicine of Buenos Aires, and L. Giusti, professor of physiology in the Veterinary Faculty of Buenos Aires, report an interesting anatomical and physiological study of two cases of ectopia of the



Ectopia of the Heart. P, point of the heart; Art, pulmonary artery; Aur, auricle

heart, one in a grade Shorthorn heifer, 17 months old, and the other a black native heifer, two years old. Tracings were made of the cardiac and arterial pulsations, and it was found that the functioning of these abnormally located hearts was very similar to those in normal positions. One of the cases is shown in the accompanying illustration. N. S. M.

An editorial in *Hoard's Dairyman* says: "The past year or two the Wisconsin Experiment Station has been treating sawdust chemically and making it a nourishing cattle feed. No doubt certain sections of the country could use this feed, if it could be purchased at reasonable prices. It should be remembered that sawdust untreated is worthless. The result in feeding sawdust in combination with high protein feed at the Wisconsin station has been satisfactory, but it is rather early to say whether it will ever become a feed generally used in the United States."

Rumor has it that Denmark will endeavor to make this country her main butter market, rather than Great Britain, as in the past. * * * Denmark needs coal from this country and the "butter money" will come handy in settling the bill.—*National Stockman and Farmer.*

The Swedish Government has withdrawn all licenses for the importation of meat from Denmark owing to the fact that cases of foot-and-mouth disease have been discovered at various places in Denmark, according to the American consul at Copenhagen.

Foot-and-Mouth Disease in England

In reply to a question by Captain Coote, in the British Parliament, it was stated that the number of animals slaughtered during the months of April, May and June, 1920, in connection with the outbreaks of foot-and-mouth disease, was: Cattle, 772; sheep, 5,265; pigs, 271; goats, 2.

Goat Rules Road in Switzerland

The goat is held in high esteem in Switzerland and is carefully protected by legal regulations. If a boy plagues a goat he can be fined and sent to jail. If a person meets a goat on a path and drives him aside he can be arrested. If a railroad train driver sees a goat on a track the train must halt until the animal can be coaxed to remove himself.

ABSTRACTS

COEXISTENCE OF UDDER TUBERCULOSIS IN GENERALIZED CASES IN SWISS CATTLE. G. Flückiger. Schweizer Archiv. f. Tierheilk., May, 1920, p. 204.

During a five-year period from 1915 to 1919, out of a total of 14,362 cows slaughtered in the municipal abattoir in Bern, 357 animals were found affected with generalized tuberculosis. Of the latter 111, or 31.09 per cent, showed udder tuberculosis. The percentage of udder infection of all the cows slaughtered was 0.77. This is about 3 times higher than Ostertag reports for udder tuberculosis in Germany (0.1 to 0.3 per cent of all cows slaughtered).

L. T. GILTNER.

CONTROL OF FOWL CHOLERA BY VACCINATION. E. Grimm and W. Pfeiler. Berl. Tierärtzl. Wochn., Vol. 35, Apr. 24, 1919, p. 139.

In an outbreak of fowl cholera, 25 hens, 4 ducks and 2 geese succumbed to the disease within the first six days. Autopsy and bacteriologic findings verified the clinical diagnosis of cholera.

A test of the efficacy of serum and vaccine treatment for cholera was made on this flock as follows: Thirty-two healthy fowls, 2 sick fowls, 2 geese and 3 turkeys were given separate injections of serum and vaccine subcutaneously in the region of the breast. Ten other fowls in the same lot were used as controls. Separation of the healthy from the sick birds was purposely omitted; the manure was also not removed from the house, and no disinfection was undertaken.

The 10 control fowls all contracted the disease, showing well-marked diarrhea and other characteristic symptoms of cholera. After 9 days they were sacrificed on account of the severity of the disease which developed. Of the 2 sick fowls which were vaccinated 1 died and the other recovered. All of the healthy vaccinated birds remained well.

L. T. GILTNER.

DIAGNOSIS OF JOHNE'S DISEASE IN CATTLE BY TESTING WITH AVIAN TUBERCULIN. T. Krautstrunk. Zeitschr. f. Infektkh., etc., der Haustiere, Feb., 1920, Vol. 20, No. 4, p. 267.

From the data gathered from a considerable amount of experimental work the author draws the following conclusions:

Avian tuberculin is a valuable aid for the early diagnosis of Johne's disease.

In advanced cases the reaction may not occur; in other cases the failures are not greater than with the tuberculin test applied for the diagnosis of tuberculosis.

For controlling the disease, the entire herd is tested at least once a year and all animals which show a positive or doubtful reaction are separated.

Visibly sick animals are separated at once and slaughtered.

Natural infection results through consuming feed and water badly soiled with the feces of an affected animal.

L. T. GILTNER.

TREATMENT OF TETANUS IN THE HORSE. H. Vontobel. Schweizer Archiv. f. Tierheilk., Oct., 1919, p. 341-343.

Vontobel gives the following summary of a case of tetanus treated by him:

Symptoms: trismus, moderate degree of stiffness of neck, throat and back. No visible wound.

Therapy: 1. For the first two evenings hot sublimate foot baths, followed by warm bandaging. 2. Injections of 125 c.c. serum divided into three doses administered over a period of three days. 3. Beginning with the second day on each evening, 25 c.c. of 10 per cent magnesium sulphate solution was injected subcutaneously on each side of the neck. 4. Each evening a clyster of 20 c.c. of 30 per cent hydrogen peroxide in 4 to 5 liters of warm water was given. 5. Suitable diet.

During the first days the symptoms became more marked, but did not assume a serious character. From about the ninth day there were striking signs of improvement with a lessening of the spasm of the sphincter muscle of the anus. The patient made favorable progress daily, being able to move about freely, pick up hay from the floor, etc. However, the horse had become so weak that after lying down it could raise itself only with considerable help and in spite of such assistance could not remain standing. Accompanying this there was no return of the symptoms of tetanus. The patient was transported to a cantonal hospital, where it was put in slings and soon made a complete recovery. L. T. GILTNER.

REVIEW

THE TOPOGRAPHICAL ANATOMY OF THE LIMBS OF THE HORSE. By O. Charnock Bradley, M. D., D. Sc., M. R. C. V. S., Principal, Royal (Dick) Veterinary College, Edinburgh, and Lecturer on Comparative Anatomy, University of Edinburgh. One volume of 166 pages, with 115 illustrations. William Wood & Company, New York. Price, $5.00.

This book, which comprises one hundred sixty-six pages, discusses, as its title accurately indicates, the relationship of the structure of the limbs of the horse and confines itself exclusively to the parts mentioned. Although prepared seemingly for the use of students who are equipped with some knowledge of systematic anatomy, it should also prove helpful as a reference volume for those who are engaged in surgical work pertaining to the limbs. Directions for exposing regions for study are followed by a discussion of the muscles, arteries, veins and nerves that the carrying out of the procedure outlined brings into view.

The work is profusely illustrated, thereby enabling the student to form a relatively clear conception of the anatomical structures and to identify them as the dissection proceeds. An interesting method of conveying to the student's mind the osseous areas of attachment of muscles and ligaments is through the use of colored plates. They are prepared so as to permit areas of origin of muscles to be distinguished from surfaces of insertion. Illustrations of cross sections are so numerous as to render no little assistance in the mastery of the subject.

The limited amount of space which is frequently devoted to the discussion of the individual structures suggests that the work is not intended to supply the needs met by the more voluminous treatises on the subject, but rather to impart knowledge pertaining to the relationship of the anatomical parts, and how they may be studied in an orderly manner. The work should be highly successful in accomplishing these ends. J. M. B.

"The better-sire campaign, which has for its purpose the ultimate elimination of the scrub sire and is making very satisfactory progress in that direction, is another and a very important factor in increasing the demand for registered stock. The potentialities in that field are almost unlimited."—*Farmer and Stockman.*

ARMY VETERINARY SERVICE

CHICAGO GROUP HOLDS PLEASANT OUTING

The army veterinarians detailed to Chicago for training in food inspection under Major George Lytle held a picnic in Lincoln Park, Chicago, on the afternoon of October 14. An exciting game of indoor baseball was pulled off under military regulations, which severely handicapped the civilians taking part. The following army veterinarians and the wives and children of the married officers were present:

Colonel Turner, Majors Lytle, Pick, Peters and McKinnon, Captains Eakins and Leininger, Lieutenants Wight, Nye, Curley, Juzek and Clark. Drs. Lacroix, Campbell and Mayo were guests.

After an armistice had been declared in the ball game, Drs. Campbell, Mayo and Lacroix were compelled to leave. The army moved to see the animals (in cages) fed and negligently failed to leave an armed guard at their supply base. This was raided. Drs. Lacroix and Mayo being, like Cæsar's wife, above suspicion, a board of strategy was appointed to apprehend the culprit. He will be tried before a court-martial. A firing squad has been detailed. This will be the tragic end of what was otherwise a delightful occasion.

Major E. B. Ackerman, who has been recently associated with Dr. J. F. DeVine at the Goshen Biological Laboratories, announces his reentering the field of veterinary practice in Brooklyn, N. Y.

Major Robert J. Foster, who has been on detail at the Surgeon General's office in Washington for the past few years, has been ordered to Coblenz, Germany, where he will serve as Chief Veterinarian with the American Forces in Germany.

Dr. E. M. Ranck, formerly State Veterinarian of Mississippi, but now with the War Plans Division of the U. S. Army, is at present convalescing from an eye trouble at the Walter Reed Hospital, D. C. Dr. Ranck, as first vice-president of the U. S. Livestock Sanitary Association, will preside at the forthcoming meeting, owing to the death of President S. F. Musselman.

ASSOCIATION NEWS

AMERICAN VETERINARY MEDICAL ASSOCIATION

Proceedings of Fifty-seventh Annual Meeting, Columbus, Ohio, August 23 to 27, 1920

(*Continued from the November* JOURNAL)

GENERAL SESSION

THURSDAY MORNING, AUGUST 26, 1920

The meeting convened at 10 a. m., President C. A. Cary presiding.

REPORT OF EXECUTIVE BOARD

THE PRESIDENT: The first thing this morning will be the report of the Executive Board.

DR. STANGE: Gentlemen, no doubt all of you understand that according to the amendment adopted this week the Executive Board is required to recommend a Secretary for the Association and a Business Manager and an Editor for the JOURNAL. Your Board has been considering this matter as much and as carefully as possible during this meeting, but we believe that in order to come to the best conclusion it would be better to consider all of the available men before taking any definite action. We decided, therefore, to recommend to you that we leave the present arrangement much as it is until the sub-committee which is being appointed in the Executive Board to consider the entire matter during the next year can report back to the Association. We recommend, therefore, in compliance with the idea I have set forth, that Dr. N. S. Mayo be elected Secretary for the Association (applause), at a salary of $2,000 a year. I move that this recommendation be adopted.

(It was voted, on motion of Dr. Stanage, seconded by Dr. W. Herbert Lowe, that the recommendation of the Executive Board that Dr. Mayo be elected Secretary be adopted.)

DR. STANGE: The Executive Board further recommends that Dr. John R. Mohler be elected as Editor and Business Manager of the JOURNAL during the next year at a salary of $1,500 a year for each position.

(It was voted, on motion of Dr. W. Herbert Lowe, duly seconded, that the recommendation of the Executive Board be adopted, and Dr. Mohler was declared elected Editor and Business Manager of the JOURNAL.)

(Secretary Mayo read the list of applications for membership which were favorably recommended by the Executive Board. It was voted, on motion of Dr. W. Herbert Lowe, duly seconded, that

the Secretary be instructed to cast the ballot for these applications. It was pointed out by Dr. W. E. Langford that one man, D. M. Phillips of West Virginia, on the list read, had not passed the State board examination of West Virginia.)

THE PRESIDENT: The motion as made will include all except the name objected to. The Secretary will read the name of the man referred to.

SECRETARY MAYO: David M. Phillips, Huntington, W. Va., graduate of the Cincinnati Veterinary College, 1916, vouched for by C. R. Neiddy and P. E. Quinn.

THE PRESIDENT: The gentleman will please state to the audience his objections to this man.

DR. LANGFORD: The objections that I have are these: If he is a member of the A. V. M. A., and recognized as such, why not pass the State board in his own State and be registered as a graduate veterinarian and not be on the non-graduate list? He objects to taking the examination of the State board. He has been given an opportunity at every meeting since 1916, and all graduates are expected to take the board, whether of West Virginia or any other State. They all have done that excepting this man, and he is no better than the rest. There are many States today that are refusing to allow graduates of recognized schools of learning to register in their State. Why? They find they are not competent and efficient men to discharge their duties as veterinarians in the State, although they are graduates of recognized schools of learning. We feel that this man should come before the board. It is only just and proper. I move that his name be rejected.

DR. NEIDDY: I signed that application and know the situation in West Virginia as Dr. Langford states, but Dr. Phillips said he had passed the Ohio State board. That is the reason I signed the application. Understand, I knew he held no graduate license in the State of West Virginia, but Dr. Phillips stated to me here yesterday that he had passed the Ohio State board.

(It was voted, on motion of Dr. Kinsley, seconded by Dr. W. H. Hoskins, that the name of Dr. Phillips be laid on the table for further investigation.)

THE PRESIDENT: Is there any further report to come from the Executive Board?

SECRETARY MAYO: The Executive Board recommends a reconsideration of the election of R. V. Cannon and Dr. Slade. The names presented and passed were Dr. R. V. Cannon, Springvalley, Ohio, a graduate of Ohio State University in 1915, vouched for by Drs. L. Anderson and F. A. Lambert; and J. G. Slade, of Cleveland, graduate of Ohio State University, 1919, vouched for by Drs. Fortune and N. C. Powell. These men are colored men. At the time they were recommended this fact was not known.

THE PRESIDENT: Gentlemen, you have heard the statements. What shall we do with the request for reconsideration of these men?

DR. GANNETT: I would like to ask if the Constitution would exclude colored men.

THE PRESIDENT: We never have elected one until this time.

DR. W. C. FAIR (Cleveland): I happen to be on the State Board of Veterinary Examiners here in Ohio, and I assure you that these men passed a very creditable examination, and I don't know whether we ought to draw the color line or not. They come up to the requirements, and we feel as though we gave them a thorough examination and graded them as carefully as we thought best. I just want to give you that little information so that you will not feel that they slipped by in any way.

SECRETARY MAYO: I think it is but fair to state to you that in the report yesterday among those unfavorably recommended by the Executive Board was a colored man, graduate of Ohio State University, and no question at all was raised as to his qualifications as a veterinarian.

DR. GLOVER: I move you that we declare these men members of the Association. (Seconded by Dr. Hollingsworth.)

DR. P. A. FISH (Ithaca, N. Y.): It seems to me that we are not holding true to the idea of refusing a man on the ground of his color. The Government recognizes these men in their appointments in the Bureau, and if they can qualify in that respect it seems to me that they should be allowed to come in this. The mere shade of their external appearance, it seems to me is a very insignificant factor influencing their veterinary qualifications in public service.

DR. L. P. BEECHY (Columbus, Ohio): I am quite sure that the veterinary profession follows this idea of merit. I don't think that it will dishonor itself in the least by taking these men in as members of the Association. If we are going to draw the color line in the Association, we ought to draw the color line in the application at the colleges, and I consider it a mistake if we discourage these men. One man, particularly, in this community is well-liked by the farmers, and I think it is a mistake to exclude him because he happens to be colored. (Applause.)

DR. W. H. HOSKINS: For twenty years we have drawn the color line in this Association. I consider that there have been rejected on that ground several good veterinarians who have done good work in their respective States. States can not draw such lines; associations have this privilege. The only danger that this Association has had from this question came when you incorporated so that any man can sue you for any amount he wants to. The amount depends upon how much he has suffered at your hands. Now, you have rejected colored men for twenty years along this line, but today you take another stand on this problem.

DR. CHARLES J. BECKER (Birmingham, Alabama): I would like to ask Dr. Glover if he would include the name of the other colored man who was rejected the other day.

THE PRESIDENT: That couldn't be.

(It was voted, on a rising vote, on motion of Dr. Glover, seconded by Dr. Hollingsworth, that these colored men, Dr. Cannon and Dr. Slade, be elected to membership in the Association. Eighty-three voted for the motion and 48 against it.) (Applause.)

THE PRESIDENT: Is there any further report from the Executive Board?

SECRETARY MAYO: The Executive Board recommends that the notice given last year to change section 7, article 19, of the By-Laws be recommended for adoption. This notice is as follows:

"To the Members of the A. V. M. A.: Notice is hereby given that at the next meeting of the Association we shall propose the elimination of section 7 of the By-Laws of the Association, and that section 9 of article 19 be changed to read section 7."

This deals with the Code of Ethics of the Association, and this notice proposes to strike out this section:

"It shall be deemed a violation of the Code of Ethics for any member of this Association to contract with or through the officers of any livestock insurance company for the professional treatment of the members' stock so insured, but this rule shall not prevent any member from becoming an examiner of risks and acting in the capacity of an expert for the same."

DR. KOEN: I move that the recommendation of the Executive Board be adopted. (Seconded.)

The livestock insurance business is assuming large proportions these days, and it is one of vital importance to every practitioner and to our Association. If this section stands as read no practitioner can perform professional services for a livestock insurance company to protect the risks that it has taken without jeopardizing his standing in this Association. It is in the interest of the practitioner, to whom, of a right, this work belongs, that he may render professional services in a professional way for a livestock company, the same as for an individual. For that reason I have moved the adoption of the recommendation of the committee.

DR. W. H. HOSKINS: This matter has been discussed pro and con for the last two days, in connection with this convention. There is nothing in that section of the Code of Ethics that prevents any veterinarian from rendering legitimate professional services to any livestock insurance company. There is nothing in that section of the Code of Ethics that prevents him from answering the call of any livestock insurance company when any of its risks are imperiled. There is nothing in there to prevent livestock insurance companies from employing veterinarians on salary or otherwise and sending them out to report any illness of their risks. It simply does one thing, and that ought to be held without any question: that livestock insurance companies can not offer veterinary services by adding the cost to the insurance and taking possession of all of the animals that they have insured, and taking this business away from the local veterinarians and hiring it out to some one veterinarian in the district or visiting a State, and employing veterinarians on salary to look after all their insured risks in a certain section of the State.

It does prevent them from doing just this thing. That is all it does prevent them from doing. It does not prevent them from employing veterinarians to go out and look over their risks and advise what should be done; but look out if you wipe this away.

You will find a pretty much increased cost in the service of veterinarians, and it will destroy the opportunity of the average veterinarian in his community; it will hurt the business of his clients for whom he is insured. (Applause.)

SECRETARY MAYO: You will pardon me for speaking on this, but the Secretary's office is a sort of a clearing house for a great many things. I am not taking a stand one way or another. I have received a number of letters from veterinarians who say that according to this they can not go out and treat animals for an insurance company; that just as soon as they go, either on a telephone or any other call, they enter into a contract with that insurance company to treat those animals, and they say that in that locality a man who is not a member of the A. V. M. A. gets the work to do among those who are conscientious and trying to live up strictly to the code of ethics of this Association, and they hold that it is just as ethical and just as legitimate for a qualified veterinarian to enter into a contract with an insurance company as it is with a mining company or anything else. I am simply stating their case.

THE PRESIDENT: Any further discussion on this subject?

DR. STANGE: I would like to say a few words on this question, because there is a great deal of insurance carried by Iowa farmers. These insurance companies pick out, or attempt to pick out, the best veterinarians in the communities in which they have livestock insured. I have had also, as Dr. Mayo has had, letters from a great many of our veterinarians, saying that they were members of our Association and they noticed by the Code of Ethics that strictly they can't accept this work, and they want to know if it is going to be a disadvantage to the veterinarian who stands best and highest in the community to belong to this Association. I don't believe there is anything unfair about a veterinarian arranging with a company to take care of the animals that they have insured in his community. Suppose vaccinations for hog cholera are called for. Those hogs are insured, and if a disease appears in that herd or that community, the insurance company reserves the right to go in and vaccinate those hogs. Instead of employing field men and sending them over the State to take the business away from the veterinarians, most companies like to employ the local veterinarian. Now, the question is: Are you going to make it impossible for our good veterinarians to do that kind of work? If you are, you are going to keep them out of the Association. Or, are you going to throw that work into the hands of the poorer veterinarians? That is the question that is up before us. This question has developed to a considerable extent in the last four or five years. I believe if we can consistently do it, we ought to make membership in this Association of advantage rather than disadvantage to a veterinarian. (Applause.)

DR. W. H. HOSKINS: I would like to say something about the origin of this. The origin of this Code of Ethics is incident to the livestock insurance being entered into in Pennsylvania. They employed veterinarians in just the capacity that Dr. Stange speaks of.

I was in an advisory position. If an animal was reported sick, I could go and see it and see that the owner of the animal employed or called the veterinarian. I could go into consultation with him, if he was willing to have me, without any violation of the Code of Ethics. Later on that insurance company thought they could increase their business by furnishing free veterinary service and increasing the premium cost, and they did so. They divided the City of Philadelphia into four districts. Horses insured for $300 paid 1 per cent; $200, $2 a year. They pooled that money and then divided it among the four veterinarians in the four districts in Philadelphia. At that time no veterinarian would take a contract for treating horses for less than $8 a head.

What was the result? Instead of lifting up the profession, it degraded it. These men had sometimes fifty calls on their lists, unattended to, for days at a time, because they couldn't render that service at any such cost, and the final outcome was the breaking up of the insurance companies just as I pointed out. I resigned from my connection with them when they adopted that plan, and this Code of Ethics doesn't conflict with rendering that kind of service. They can go and adopt any treatment and take care of the stock without any violation. It is merely a question of judicial interpretation, and I hope the suggestion made will have some influence. I will be ready to defend any veterinarian who might need defending for what might be called violating the Code of Ethics.

(Dr. R. C. Moore called for a rereading of the section referred to.)

SECRETARY MAYO: I would say that I have consulted an attorney on that matter and he says this is absolutely clear and right.

(Secretary Mayo reread the section.)

DR. KOEN: In discussing this matter Dr. Hoskins said he was the author of this section and understood what it means. If it means what he has said to you this morning, I think he is the only man in the audience who can understand it that way, for it surely doesn't say it. Conditions are different now from what they were ten years ago when Dr. Hoskins was connected with that insurance company. The people in Iowa and Illinois are confronted with new conditions, and the opinion is this, if they accept service and render professional service for the insurance companies, they violate the Code of Ethics. If this is eliminated and any insurance company enters into a contract with veterinarians that is detrimental to the best interests of the profession, those veterinarians entering into that contract can be dealt with by this Association. Unless this is eliminated, you are either going to prevent the local practitioner out there in the Central Western States from rendering professional service when called upon, or you are going to make him jeopardize his membership. I am in favor of upholding local practitioners and benefiting many by this Association rather than handicapping many. (Applause.)

DR. R. C. MOORE: We have an old, reliable member of this Association in that capacity with an insurance company, and it is

his business to examine risks or have it done, and to take general management of the veterinary side of the business of that company. He does not treat animals, but when he finds it necessary to vaccinate, he calls the local veterinarian and he goes along and encourages the fellow all he can and does all he can to build up the profession. He is a conscientious man.

I am not prepared to say how I construe that section. Dr. Hoskins seems to understand it clearly. Dr. Koen seems to understand it differently. It seems to me we ought to be able to draw a section that is easily understood. If this isn't, we should have one that is.

This man of whom I speak, who is a member of the Association, told me last winter that he had studied very, very carefully what he ought to do, whether he ought to withdraw from the Association or whether he ought to withdraw from the insurance company. He is absolutely conscientious and wants to do the right thing. It seems to me if we are going to do the right thing we ought to have a section that could be understood easily, and there would be no doubt about the consequences.

(The question was called for. A rising vote was taken, which resulted 81 for and 26 against. The recommendation of the Executive Board that section 7 of article 19 of the By-Laws be eliminated was therefore adopted.)

ST. JOSEPH VETERINARY COLLEGE

THE PRESIDENT: According to agreement yesterday, we are to give Dr. Moore a chance to present his case about his college. We will now give Dr. Moore of St. Joseph Veterinary College the opportunity.

DR. R. C. MOORE: The Committee on Intelligence and Education reported unfavorably on an application that the St. Joseph Veterinary College had made for being considered an accredited veterinary college of this Association. I want to say in the beginning that I am not criticizing the Association when I make the remarks I am going to make.

I want to correct what I believe is an error, for one thing, that was in the application. I believe the report showed an application for reinstatement. Reinstatement might put this college back in the same place it was prior to the New Orleans session. The request I made was in writing and handed in. I have a copy of it here. "We hereby make application for recognition in your Association as an accredited school, and respectfully refer you to the evidence of our fitness now in the hands of your Committee on Intelligence and Education."

The reason I wanted to make that clear to you was that we are not asking you to put us back. The reason I make this distinction is this: The class that matriculated last year apparently is not in accordance with the rules of this Association. It was a question, "What would be the responsibility of this Association in that class?" Precedent has been set in this Association several times regarding

similar conditions with colleges. Most of you remember that we went from three to four year course, but there were several of our best institutions that did not move up the time to the four-year course as this Association required. I think, if I am not mistaken, the institution presided over by your President is one. The Veterinary Department of the great University of Ohio was another; New York another; Toronto another. They could not do so at once, but promised to move up to it as rapidly as they could, and they were not rejected. That is a point I feel was a precedent set for the things I want to bring to your attention this morning.

If you will refer to the committee's report, there were two objections raised to the St. Joseph Veterinary College being added to the accredited list. One of those was a laxness in giving advanced standing to students. The committee raised one question with me when they examined the credentials of the students in our college, and one was so far advanced in attendance—that was the case of a gentleman from Iowa State College—that nothing could be done. I had two students last year who had finished, as I supposed, one year's work in the Iowa State College. One of them sent in his credentials a little while before the school opened. I examined them carefully and found them correct. The day of opening of school he appeared and brought with him a neighbor boy who, he claimed, was a classmate of his in school. He had his credentials, and in looking over them casually, I believed they were all right. I matriculated him in the sophomore class. When the committee came to examine those papers this spring, one of the members from the Iowa State College detected the error in that admission and called my attention to it and told me that this man had been rejected on account of low scholarship, and when I referred to it I at first was unable to see that he was correct. Dr. Day, who was also a member of that committee, said, "I would have taken that as a clear certificate that he was eligible to admission here." He thought it was right, as I said, but when we came to examine it carefully we found it was not. This was the day after the junior and freshman classes had been dismissed, two days after our examination. I wrote this man and told him the facts and told him that he must get clearance from the Iowa State College before he could come into our institution. We all make errors, and I believe that when we correct them promptly it is about all we can do.

We have these questions coming up day after day from various sources. I had one come up the other day from the Polytechnic College of Alabama. A man wrote me that he had had two years' work in that institution and asked for admission to our school. I wrote him that he could be admitted to the junior class if his credentials showed he had completed that work. He sent me the credentials and the grades apparently were low, but I could not find a single word showing what the passing grade was. I was unable to state whether they were all right or not. The heading of the papers stated that he had been admitted conditionally on 12

high-school credits, with the understanding that he would make up the other 2, making 14, before he could finish up the work. I compared the work in those two sheets and I found his general average in the second year compared favorably with his first year's work, so I was at a loss to know how the credit was conducted. The registrar had said in a footnote on this certificate that this man had been asked to withdraw on account of his low college work. I couldn't understand definitely whether that meant in reference to the matriculation there, or whether it meant the low grades in those papers. I took it from the papers that he had been passed from the sophomore year on a certain per cent he had made from his classes. Being in doubt, I wrote Dr. Cary and asked for particulars. He wrote me that the man had not been objected to because of his entrance requirements, but because of the low grades he had made on his two years' work. I immediately wrote the man that he could not enter our school. We have those things coming up and have difficulty in knowing just what to do with them. We don't want to do an injustice to the individual nor to the profession nor the rules of government.

When these questions come up in connection with the B. A. I., I always feel that I have a safe background, because I immediately refer them to the Bureau, giving the Bureau all the evidence I have in the case, and when I get their criticism or their report, I feel I am perfectly safe in following their recommendations.

I have not had any backing in the American Veterinary Medical Association. The committee has not been organized until this year. I was on that committee and I know whereof I speak. There was no head on the committee, and we could not get into shape to do very good work. Under those conditions there was nobody in the A. V. M. A. to whom I could refer those reports. I did refer them to President V. A. Moore, and he was unable to say what the Association would do. I believe you would help these schools wonderfully if you would empower the chairman of your committee to pass upon these things. His ruling should stand, and we would not be in doubt. It is not the desire of my school to violate the rules of this Association, notwithstanding the fact that the reports would indicate the contrary.

The second objection that was raised was the admission of students last year, under the two years of high school requirements. I would like to review that matter a little with this Association. If you refer to the minutes of the Philadelphia meeting and look at the report of the Committee on Intelligence and Education, you will find that the committee met in Chicago, I think in May, 1918; and inasmuch as our school had been receiving various requests and rulings from the Surgeon-General's office, we were in doubt as to what we were required to do. We didn't have any definite data that would say to the students, "You can be, or can not be, admitted."

Considering that matter, Dr. Dunphy, Dr. Kiernan and myself, three members of the Association, decided it would be advisable

to send a subcommittee to Washington and try to get an understanding from the Surgeon-General, the B. A. I. and the A. V. M. A. as to just what we could depend upon that year and next. It was war-time and young men over the country could not enter schools as they desired. We felt it was only fair to get some fixed and fair understanding on this Association, so Dr. Dunphy and Dr. Kiernan were selected as a committee. Dr. Dunphy was nearest to Washington, and they were selected to go down and get a ruling on this. Dr. Dunphy wrote me afterwards—and I believe he will verify this—that they had sessions with Dr. Mohler and representatives of the Surgeon-General's office, and they had finally agreed on requiring two years of high school for admission in 1918-19, three years in 1919-20, and four years in 1920-21. I have a copy of that agreement in my desk, and Dr. Dunphy is here to verify it, and it is verified if you will refer to the proceedings of the Philadelphia meeting. I have the copy in my hand.

On the strength of that, we wrote a number of our applicants who were being taken into the Army by the draft, and who wanted to know if they could get in later without a high-school education. I informed them of the rules. We had informed all our applicants that we required three years of high school for last year's training.

During the Philadelphia meeting, after the adoption of this report from the Committee on Intelligence and Education, we disposed of the matter. The resolution made before at Kansas City was exactly in accord with this. It required three years of high-school training for last year and four years for this year. We had no objections to that resolution coming along. We believed the thing to do was to work to meet that condition, meet it honestly and fairly.

When the report of that meeting came out in January, that was the first intimation that I had that there had been any changes. I was out of the convention room working, signing up the report of the Committee on Intelligence and Education, when that amendment was passed, and I had no knowledge of it until I received the report of that meeting.

The B. A. I., working with the Civil Service Commission, thought it advisable to hold to the two-years high-school requirement, and Dr. Mohler told me that he thought it was only fair to the schools and fair to the young men who had been taken by the draft to let them come in last year on the old basis. I believe a good many more in this audience believed it was the only patriotic thing to do. It was only fair, because we had shut them off from completing their work then.

Taking into consideration the way in which the amendment was passed, we did not know that this Association required a high-school standard last year. Last year's meeting was not held at the official time, but in November, two months after school had opened and two months after these students were in. I sent in my catalog last year and made a clear statement of the facts to the meeting in New Orleans. After stating the conditions, we said that we would

follow the requirements of the B. A. I. last year, and admitted students on two years of high-school training when properly certified to by their State or school officers, where they had finished the work. We further stated—and I put that in capital letters—that this year, beginning with 1920-21, we would require four years of high-school training for admission. We believed we were doing the fair thing and all we could do under the promises we had made. I explained that to Dr. Bergman when he inspected our school this year, or last year, before we were complying with all the requirements, and he made notation of it and said he didn't believe it would be required.

The resolution of Dr. Klein, as offered at Kansas City, really is two amendments. The first was in reference to the time that the school must teach, 32 weeks of not less than 17 credit hours a week. I said we exceeded that last year by a long way. We gave 32 weeks of actual teaching time. In place of 43 hours as required by the B. A. I., we put in over 30 hours of actual teaching time in the laboratories, not scheduled, but actual teaching time.

The second paragraph reads: "Beginning with the college year of 1918-19, matriculation shall be not less than one year of high-school training or school work or equivalent studies taken in other preparatory schools; beginning with 1919-20, the requirements to be not less than two years of high school, etc.; 1920-21, not less than four years of high-school work or its equivalent."

That was laid over. I offered these as amendments to the By-Laws. I am going over to the action of the Philadelphia meeting. I want to call your attention to one thing there, and then I am through. When this matter was brought up in the Philadelphia meeting, here is what took place:

"THE PRESIDENT: Now, the Secretary has a further report from the Executive Committee.

"ACTING SECRETARY DAY: The Executive Board recommends the following with reference to the Klein resolution, the resolution that was laid over last year. They recommend that the amendment to section 4 of article 2 of the By-Laws should read as follows: 'Except as provided in section 3, only such veterinarians,' etc."

It calls for 32 weeks of training, which we give, absolutely, not only by chart, but by actual class hours. Dr. Hoskins moved the adoption of this change in the By-Laws, and it was adopted unanimously.

The next section follows.

"ACTING SECRETARY DAY: The Executive Board then moved to amend section 5, article 2: 'Beginning with the collegiate year of 1919-20, the matriculation requirements shall be not less than four years of high-school work or equivalent studies, taken in other preparatory schools; provided,'" etc., which it is not necessary to read.

This was voted on immediately and passed. Our Constitution and By-Laws provide that any motion to change a By-Law must

be read at one meeting and laid over until the next meeting. Here is a motion by the Executive Board read and adopted and called a part of our Constitution at one meeting without any chance of the people knowing what kind of a change was made, and I have had advice from a number of men who are supposed to understand these things more clearly than I do, and it is a universal opinion, as far as I know, that this is an unconstitutional amendment. If it is, then you have no standard for high-school training in this Association, more than the two years adopted by the Detroit meeting. I believe, then, that we did not transgress the constitutional rights of the members of this Association.

I thank you for your attention. (Applause.)

THE PRESIDENT: On account of the limited time, I shall ask those who discuss this matter to confine themselves to five minutes.

DR. R. C. MOORE: This is a vital question with this institution, and I want to call your attention to the fact that we have been members of this Association for years. If we are cast out here, it means a great financial loss to us that is almost irreparable. I ask for discussion.

THE PRESIDENT: Is there any further discussion on this matter?

DR. W. H. HOSKINS: Mr. Chairman, we have been traveling a very rapid pace in this Association in the last five to ten years; so rapid has been the pace that almost every veterinary school in the United States or in America is confronted with the smallest entry of the student body and we have today in the aggregate the smallest student body in the history of veterinary medicine.

It is a beautiful sight to see a man like R. C. Moore coming in here, pleading for leniency and pleading for more time, because he is one of a group of men who, for the last twenty or thirty years, have invested every dollar of their own money and all that they might command in the carrying on of some of the best private veterinary schools that ever existed in the history of veterinary medicine in any country. More than 2,000 men went out of the school in Kansas City. The school was maintained by a group of four or five men who had all that they possessed in the world invested in that school. Like conditions obtain in several other schools in the country. Dr. Moore has up to the present time met every advance of this Association, and it would seem to me that some degree of leniency might be shown.

Yesterday the secretary of the Committee on Intelligence and Education made the statement, which was a very forceful one indeed, that this Association had no power over any veterinary school in the land, and that was true; and there are not three States in the Union that have a standard beyond that given by the school at St. Joseph. Time after time in the history of this Association we have extended leniency to schools, and they have always met what we demanded, and I am in favor of granting to Dr. Moore's school leniency at this time, for, as I said before, he can go out and run his school without this Association and the graduates of that school

can go into 90 per cent of all the States in the Union without any question. It is a great tribute to this Association that he comes here under these circumstances and pleads for a reprieve of a short period. (Applause.)

DR. BAKER: Being out of school work at this time, for various reasons, which you probably all understand, the writing on the wall has been noticed and we have succumbed to it. There are two private schools now still struggling against the inevitable. I rather admire the remarks of Dr. Hoskins, especially that word "leniency," but I would be inclined to amend that word a little by saying "leniency based upon fair play." Dr. Moore has presented admirably the conditions of his school, and it appears to me now, as an impartial judge, that it would be unfair to the St. Joseph school to deny them admission and not let them come in as an accredited school. As Dr. Hoskins just said, many other schools failed to comply immediately with the requirements of this Association, but they did after a while, after leniency was given them, and they made it up in time to get recognized, and have been operating according to the rules of the Association ever since.

Nothing will be gained by this Association by eliminating the St. Joseph school from the accredited list. We won't violate or reduce our standard of ethics by admitting them. He has come up to the scratch. Four years, required this year in the Constitution and By-Laws, does not come in until this fall. All of this previous four-year business was a little ahead of time, a little premature; and bear in mind, as another strong asset that he is in possession of today, he is in good standing with the United States Government. (Applause.)

DR. R. C. MOORE: I failed to say that our requirements this year are four years of high school, a certificate of having completed four years of high-school work in an accredited four-year school.

DR. P. A. FISH (Ithaca, N. Y.): It seems to me that the issue here is rather a concise one. These matters were referred to quite completely at the New Orleans meeting. As I understand it, the requirements of this Association were known in advance and the private schools had an opportunity to comply with them. Most of the schools complied with them, but Dr. Moore of St. Joseph did not. Those schools that did, suffered financial loss because they did comply. It seems to me it is most unfair to penalize these schools that did comply and favor the one that did not.

DR. G. G. FABER (Mitchell, South Dakota): I don't see why there should be any line drawn as to educational requirements where students get their education, as long as they have it. I don't see why you should say a man should have a high-school education, or two years high school, but I say this: Have an examination board and examine these men and bring them up to a certain standard. If I remember correctly, I have heard it said that in Germany the veterinarian is up in a class with the M. D.'s. I think if you will go to their records—I am not stating this to be a positive fact—you will find that Germany does not say that a man shall be a graduate

of any school; if he can pass the required examination, he can go out and practice.

I myself was denied the privilege of a high-school education. I entered a private veterinary college for the simple reason that I could not enter a State school. I heard the dean of this school make the remark that graduates from high school came in, flushed big for a week or two, and after that they were back struggling in the drifts with the rest of us. I want to put it up to you daddies of boys in high schools, how long would they stay there if it wasn't for their athletics and you fellows back of them with a good, fat pocketbook? When I was 21 years of age I could not do an example in long division. I was in business for myself. Since that time I have put in five years of school. Had I been denied the privilege to enter a veterinary college, I would still be out in the class with the a veterinary blacksmith. That was my profession—or trade, rather. I entered a school, took some preparatory work for two years, got a certificate from the dean of my school, and was admitted on a level with the graduates of high school. I think if you will go to the records you will find that the majority of men without a high-school education have made equally as good, if not better, records accordingly than men admitted with a high-school education. I happened to be with them, sat right beside them, elbow to elbow, and I know when it came to good old examination time they were right along with the rest. (Applause.)

THE PRESIDENT: Any further discussion on this subject?

DR. R. C. MOORE: Mr. Chairman, I move you that this application be granted. I make a motion to the effect that this school be added to the accredited list of the A. V. M. A. (Seconded by Dr. Koen.)

THE PRESIDENT: The motion is open for discussion.

DR. WAY: As chairman of the Committee on Intelligence and Education that presented the report yesterday, I wish to make a few statements in reference to our work this year and in substantiation of our report. I want to say—and I have discussed this with Dr. Moore and other members of the St. Joseph organization—that there is absolutely no personality concerned in this discussion so far as the committee is concerned. I think the dean of the institution understands that. The committee individually think as much of Dean Moore as we can of any other member of our Association of whom we know and with whom we are acquainted as we are with him.

The committee visited the St. Joseph school and went into the facilities and requirements, educational qualifications of the students, etc. It seems to me there is very little difference between a request for reinstatement that was made by this school and a request for recognition at this time. However, if it is a question of recognition, entrance requirements as laid down by the A. V. M. A. and as put into effect by that institution last year, the requirements of this Association are clearly violated.

In reference to the statement made by the Dean, as regards advanced credits, I think that his own statement this morning is clear evidence of the statement made by the committee yesterday that these students were admitted apparently under very lax consideration of advanced credits. If a student brought a card from another institution virtually stating in red ink on that card "Dropped for scholarship," it would seem that the authorities of the institution might interpret that statement. However, the one member of the committee who made the inspection of the school this year, as he has been referred to as having examined these credentials, will discuss that point in a moment.

The committee wishes to read again a few statements in reference to conditions as they were found at this institution. There were some things that were not presented yesterday because in our opinion the reasons as stated were sufficient, inasmuch as the requirements approved by the Association this last year were clearly violated.

I don't want to go into a detailed discussion of the various steps of this matter that have led up to the four-year requirement. It has passed through a series of years at the meetings of this Association; but suffice it to say that at Philadelphia the Committee on Intelligence and Education did recommend that the requirements be graded from year to year. However, the Executive Board felt that the requirements for 1919-20 should be a four-year high-school course and they so specified in the recommendations of that committee, presented the same to the Association, and they were passed by the Association. It is not a question of By-Laws; it is a question of a definite action of the Executive Board, presented to the Association and adopted.

In reference to the inspection of this institution, I want to read just a paragraph or two from the report of the members of the committee who visited the institution.

"A total of 154 students were in attendance, divided into classes as per exact questionnaire and original copies furnished, showing the original classes of the four classes for 1919-20 and which constitute a part of this report. Regarding the freshman class, of a total of 50 students, only 5 could have matriculated on the basis of the A. V. M. A. matriculation requirements effective 1919-20. The remaining 45 were matriculated on the two-year basis and contrary to A. V. M. A. regulations. Of the three upper classes, 23 students entered from other veterinary schools with apparently very lax examination of advanced credits."

Regarding the general educational facilities, equipment, teaching methods, etc., as chairman of the committee I desire to read from the report of the members of the committee who made the inspection.

"The college building is a two-story brick structure, 100 by 140 feet, which accommodates the educational facilities, including the hospital which is operated as a sort of private institution by certain of the men connected with the school. Two laboratories are provided, one equipped as a chemistry laboratory and the other takes

care of all other laboratory work offered with the exception of dissection. Apparently, therefore, this one laboratory is considered sufficient for instruction in the following subjects: Histology, embryology, zoölogy, physiology, botany, bacteriology, pathology, laboratory diagnosis, parasitology, for 165 students. Needless to say, adequate laboratory facilities and equipment are lacking. It could not be expected that one laboratory, somewhat meagerly equipped, would suffice for giving students of all classes very thorough training in laboratory technique, or much of an opportunity for laboratory study and observation in connection with the various major subjects.

"The dissection-room methods and demonstration material in use did not impress the writer as being conducive to thorough work in the subject of anatomy.

"No library facilities or reference books are provided, as far as I could learn, nor was either a working or permanent pathological museum in evidence.

"While a roomy clinical amphitheater for observation of clinical cases is provided, the clinical facilities are lacking, on the whole, for handling a wide variety of clinical material, including postmortem facilities and where the students may actually come in contact with and assume the general care of the cases."

Considerable stress is laid upon the availability of stockyards for observation of clinical cases, and the opportunity to visit outside cases by accompanying a practitioner connected with the school in routine practice. This practice may be similar to the custom employed at some other institutions of farming out their students, so to speak, with practitioners of various degrees of ability and questionable teaching qualifications. This is a practice known to this committee, and, as stated in our report yesterday, should not be countenanced by this Association.

"While undoubtedly of value, these do not, however, meet with the requirements whereby, through regular schedules and hospital and ambulatory clinic facilities, students may assume individual responsibility in the care and treatment of cases assigned them, submitting detailed written reports as to the condition of the cases under their observation or the results of postmortem examinations. Several students did not speak favorably of opportunity provided for detailed clinical study.

"The general appearance and impression created by the institution can scarcely be said to be such as would tend to instill in the students true appreciation of the scope of the profession into which they are entering, or to instill the spirit to go deeply into the sciences and practices of the profession. What might be termed an educational atmosphere seemed to be lacking."

This, gentlemen, is the detailed report of the members of the committee who made the inspection, and was on file at the time of the New Orleans meeting, and is part of the record of the committee. These records, of course, are accessible to any member of the Association for review.

Reference has been made to the small entrance of veterinary students to veterinary colleges, due to the rapid strides that have been made during the past two years. The strides have been so rapid that students are not able to keep pace with the A. V. M. A. Personally—and I think I can speak for the rest of the committee—we question whether or not this is the reason for the low entrance requirements. The great industrial field these days offers remuneration for young men far in excess of what they may see in prospect in entering the veterinary profession. I know many veterinarians say, "I wouldn't have a boy of mine enter the profession, and I tell every boy that asks me to forget it." Is that the attitude, or is it shortage of students due to the rapid pace that we have set? I believe it is due to industrial conditions and to the high remuneration that can be obtained in the industrial field.

The statement was made by one of the members on the floor today in reference to education in Germany. First, we are not following Germany (applause), and second, it is a general and accepted fact that if the veterinary profession is to assume a position in society with the other learned professions, we must maintain higher and better entrance requirements and educational standards and better and higher technical educational standards. (Applause.)

The question of fair play has been submitted. There is no question of fair play in this discussion. The play has been perfectly fair, open and above board, and it is a question of principle.

I thank you for your attention. I trust you will support your committee, and we pledge you, if the committee continues, to do everything we can do to help, to assist and to formulate better things for the veterinary profession of North America. (Enthusiastic applause.)

DR. R. C. MOORE: May I reply to one or two points?

Speaking about fair play, I think there are possibly two sides to the fair-play proposition. I believe that every member of the committee will agree with me that it has always been the rule that when the schools have not measured up to the standard, they have been notified of their deficiencies and given the opportunity to correct them. I asked the committee that made the inspection—I was lying sick in my bed at the time—if they found defects to let me know in time to change our catalog last year and make the improvements. I asked again at the New Orleans meeting for the same thing. I asked the committee when they examined the school to let me know if there was anything wrong. This morning is the first hint I have had that defects were found. Now, is that fair play? Is that the play that has been accorded the colleges of this Association heretofore? Is that fair play, or is that discrimination against this institution? I credited the committee with being fair before, but I believe they have been unfair from the statements made now.

DR. CRAIG: Mr. Chairman and gentlemen of the Association, I don't want to take up your time, because I feel you are tiring of this discussion, but I want to bring out certain facts that are history.

The private colleges of the United States held a meeting in Chicago in 1919. At that meeting there were present representatives from the four private veterinary colleges then running—Chicago, McKillip, St. Joseph and Indiana. The question at that time before that body was whether or not we would accept the recommendations of the Bureau of Animal Industry. Clearly the requirements of this Association were a four-year course in an accredited high school, or 14 units, so certified. The question was whether we would ignore the regulations of this body and take up and maintain the regulations of the B. A. I. A vote was taken on that, and the colleges voted to maintain the requirements of the B. A. I. The Indiana College voted to maintain the requirements and accept the requirements of this body. We did that. (Applause.) We maintained your requirements last year, which we knew we would do at a large financial loss—and we did it at a loss—but, gentlemen, we are clear.

Is it fair to us—if you are talking of fair play—to put on the accredited list any institution which has openly and with knowledge of the fact disregarded your requirements? (Applause.) It was all right for a young man twenty years ago to say he couldn't get out and get a high-school education. Today there are high schools on every crossroad, and if a man hasn't the ambition, the courage and the character to get a high-school education, he has no business in this profession or any other profession. (Applause.)

I want to say to you right now, Where are you going? Is this Association going backward or is it going forward? That is the question for you to decide. Are you going to open the doors and take in the rag and bobtail of Tin-can Alley, or are you going to stand up in your communities as men and citizens of the greatest country that ever existed? What are you going to do? It is up to you. We have complied with your regulations, and we intend to comply with them because we believe they are right. (Prolonged applause.)

DR. R. C. MOORE: I have been virtually accused of misrepresentation regarding that meeting of the private colleges in Chicago. I was chairman of that committee and presided over that meeting. It has been stated here that three colleges voted for maintaining the standards of the A. V. M. A. I haven't the records of that meeting with me, but I believe I can procure them. Roll was called, and as I remember, the motion was made by Dr. Quitman that we follow the requirements of the B. A. I. Dr. Baker is here; he knows what was done at that meeting. Dr. Craig wrote me three weeks after the meeting that his board had decided to follow the requirements of the B. A. I.

DR. CRAIG: The A. V. M. A. I was only there representing the college as an individual, and I had to bring the matter before the Board of Trustees. I will say that the Board of Trustees decided to coincide with my vote.

DR. MOORE: Mr. Craig made the statement that three colleges voted for the following recommendations of the A. V. M. A.

(Cries of "No" from the audience.)

DR. MOORE: Then I misunderstood him. Then the statement is wrong.

DR. DAY: I feel that it is necessary for me to make a statement, since my name was brought out so clearly by Dr. Moore in his first statement in connection with this one individual who came from Ames. Dr. Moore said that I made the remark that I would have taken him. I do not remember exactly what remark I did make. I don't remember the conversation. Dr. Moore is a gentleman I have known for the past 25 years, and I have every confidence in him. We are both more or less given to joking, as most people are, but have very high regard and respect for each other. I do remember very well that it was written in bold red ink across the card of this student, "Dropped on account of scholarship." I do remember that very well. I believe that I can call Dr. Moore's attention to one individual we found who was supposed to have had two years high school. He had had only one and one-half years of high school, as his certificate showed.

Much has been said about fair play. I am for fair play. Something has been said of some of the findings and some of the shortcomings at each of these institutions. I am here to say that in every institution that I had anything to do with examining we found some points to be criticized, and I do not believe there is an institution in this country that hasn't something which can be criticized. I think constructive criticism is the thing, and that is what is going to bring our profession to what it should be. However, I must say that in some of these institutions the shortcomings were so flagrant that it was necessary to make some remarks about them.

You have heard the report of the chairman of this committee. It is not necessary to go over that report, but I do hope that you will consider this matter very seriously. This is a serious question. We are in a state of evolution and we should always be in a state of evolution. We will never get anywhere unless we are. Let us go upward instead of downward. I thank you very much, and trust you will support the recommendations of your committee. (Applause.)

(The question was put on the motion of Dr. Moore to adopt St. Joseph as an accredited school, and the result was as follows: For adoption, 9; against, 125.)

DR. KOEN: I move that the Committee on Intelligence and Education be instructed, with power to act, that after the sessions of the St. Joseph school have begun for the next term an investigation be made of that school, and if it be found that the requirements of this Association have been met and are being met, the school be then placed upon the accredited list. (Seconded by Dr. Kinsley.)

THE PRESIDENT: The motion has been made and seconded. Is there any discussion?

DR. KOEN: I think this is of too vital importance to be passed over as we have done. The Committee on Intelligence and Education is to be commended for the most excellent and comprehensive

report it has made. A better report has never been presented to this Association. The committee holds a most difficult position in making these investigations. I believe that every member of this Association has faith in that committee. We want to uphold it. It has found shortcomings in this school that this Association can not tolerate, but we are all human. It is only fair, if we have made mistakes, that we be given a chance to rectify them.

You recall the Bible story of David, who sinned grievously, but when he repented he was forgiven. There was another story of a woman who was caught in the act of adultery, and the mob came to stone her. The Master said, "Let him that is without sin among you cast the first stone." After a moment all had fled, and He asked, "Woman, where are thy accusers?" They were gone, and He said, "Neither do I accuse thee. Go thy way and sin no more."

That is fair play. There is a principle of education involved in this matter, but there is also a principle of life, of justice, involved here, and that is the reason I want to appeal to you this morning.

Dr. Moore made a mistake in trying to uphold the boys that went forth into war. In 1917 hell broke loose on this continent and things were not normal. The mistakes that were made by Dr. Moore largely revolved around the circumstances growing around the war. The boys that would have matriculated under conditions which exist now could not, but Dr. Moore made a promise that he would accept them, believing that he had the authority to do it. The Government of this country believed it was right. There was many a young man promised the job when he came back home, having answered the call of war, who found when he returned that the job had been taken by someone else. Was it fair play? Do we not hear about it on every hand? Was it just? When the boys came back, after they had answered the call of their country and had served as best they could, Dr. Moore made good his promise, and in doing it violated the rules and regulations of this Association and should be condemned. This is his only offense in a large measure. Are we going to condemn him?

Sixteen years ago I sat in his classes. Then he was fighting as vigorously as any man could fight for the veterinary profession, and he had fought long years before the members of this committee had entered this profession. Last year when this action was taken I met him in the lobby of the hotel, and he said, "John, they have nearly killed me." He is going down now to the evening of his life, heart-broken, unless his efforts for the veterinary profession and for the school to which he has given his life are appreciated. He is going away with a broken heart, and I say to you, there isn't a man in the veterinary profession who has contributed more, and whose standing in the profession is greater than "Daddy" Moore. I say to you that "Daddy" Moore is not guilty of trying to run a quack institution. He has done too much. I am one of the students of that school.

I want you to give to "Daddy" Moore the chance that he is asking for. I want you to give him that chance that every man should have

to make good, and that is the reason for making this motion. I have confidence in this committee. I believe that if upon another investigation they find he is making good, and that he goes his way to sin no more, to violate our regulations no more, he will be given this chance and that his school will be placed back on the accredited list. I thank you. (Applause.)

SECRETARY MAYO: I shall object very strenuously, and shall use every legitimate means at my command, if an effort is made to have a school placed on the accredited list until a report has been made from a committee of this Association. I know whereof I speak, and I know that Dr. Moore and the members of the faculty of the St. Joseph Veterinary College have known all the time just what the requirements of the American Veterinary Medical Association have been. There is no question about it at all. I sincerely hope that the school will meet those requirements and be placed on the accredited list, but I sincerely hope it will not be placed upon that list until this committee, in whom we all have confidence, recommend that to this Association. (Applause.)

DR. FISH: I move an amendment to the motion, that the Committee on Intelligence and Education visit the St. Joseph College in the usual course during the year.

DR. BELL: I would wish to offer an amendment to Dr. Koen's motion, that the committee give Dr. Moore, dean of the school, an itemized list of his shortcomings, so he will be able to correct them.

THE PRESIDENT: That should be a separate motion.

DR. MOORE: In view of the conditions that exist, I doubt whether it is necessary to pass any of these motions. When I look back at the action of the committee in criticizing, here before this Association, things that they claim they have found, without giving us due notice and an opportunity to correct them, I feel that there isn't any use for us to expect anything from the hands of this committee. The intention is to cut off the head of this institution, to down us. That is plainly stamped throughout the whole proceedings.

I have been a member of this Association for a good many years. I don't believe there is anybody who has worked harder than I have, but today I have been almost thrown from this Association. I was a member of the Committee on Intelligence and Education for two years. I visited a good many schools of this country, and I want to say to you that the conditions at St. Joseph will compare favorably with three-fourths of the institutions of this country. I know whereof I speak; I am not speaking as one outside. I am here to say what I know from actual investigation.

DR. MCGILVRAY: I have refrained from taking part in this discussion here this morning because it is a very delicate matter to deal with. However, coming from what we might term another country which has endeavored to comply with the requirements of the A. V. M. A. and the Bureau, I take a step for fairness. I have never had the pleasure of making the acquaintance of Dr. Moore of St. Joseph College. I came here with an open mind about it, but

still leaning toward Dr. Moore; in fact, I believe, intending to vote in favor of the St. Joseph Veterinary College being retained on the accredited list. However, on hearing this discussion, I began to waver and my mind wasn't made up.

When Dr. Koen stated what Dr. Moore was doing for the returned boys, I just thought of what I had to do. I was besieged there by the soldiers in Canada to take into the school a large number of men and give them educational training. I took the stand that they could only get in there if they met the requirements. I took that stand. We got none of them. I have in my possession letters from the Vocational Training Board at Boston, Massachusetts, in which they refused repeatedly to take men into that school unless they complied with the requirements. They have sent some of those men to the preparatory school in Boston. If that school is recognized by the Bureau of Animal Industry of the United States, we will accept them.

I have given the committee my word that I will live up to their requirements as far as permitted by the State and University. I am going to do it. I am going to support Dr. Moore. I don't see any harm in examining again, but the thing is this: We have to abide by the requirements, and I, for one, stand for that. If our school can't meet the requirements, we will have to take the same road as the St. Joseph School. If we can't meet the requirements, there is nothing to do but go our own way.

(The vote was taken, and the motion to make another investigation of the St. Joseph school was lost.)

DR. MOORE: Mr. Chairman, I remarked a while ago that I had been a member a good many years. I have performed every duty that I have been called upon to perform. I have run schools and done work for this Association and other institutions of this country. I have, I believe, as many friends among the veterinarians as any other man in the United States. I am proud of the friends. I have paid my dues for this Association for this year. I can leave it with clean hands and a clear conscience. I will hand my resignation in before I leave.

COMMITTEE ON ABORTION

DR. EICHHORN: We heard the splendid report of the Committee on Abortion. There have been no funds provided for such a committee during the ensuing year. I believe that the Association should decide on continuing such a committee, and I move that an appropriation of not less than $500 be made and that the committee be continued. (Seconded by Dr. Hollingsworth.)

SECRETARY MAYO: This will have to go to the Executive Board.

DR. STANGE: I believe that the Constitution and By-Laws provide that the Budget Committee will make up recommendations regarding expenditure.

(Dr. Eichhorn's motion was adopted.)

Adjournment.

FRIDAY MORNING, AUGUST 27, 1920

The meeting convened at 9:40 a. m., President C. A. Cary presiding.

REPORT OF BUDGET COMMITTEE

THE PRESIDENT: The Secretary will read the report of the Budget Committee for the ensuing year.

SECRETARY MAYO: You understand that the different committees desire funds for their work, and each committee thinks its work is the most important work of the Association, which is proper. I don't think we would want a committee that didn't think it was doing an exceedingly important work; but it is the function of the Budget Committee to consider the situation as a whole, from as unbiased a point of view as possible, and they report as follows:

They recommend a contingent fund for the President of $500. It is understood, and is a part of this report, that it be this sum or as much thereof as is necessary. This sum is the same as for last year.

Intelligence and Education	$1,000
Legislation	1,500
Salmon Memorial Fund	50
Committee on Abortion	500
Treasurer	300
Committee on Pharmacopœia	250
Committee on Anatomical Nomenclature	50
Purchase of ten shares of stock in the Horse Association of America	50

The running expenses of the Association are to be paid, as at present, through the Secretary's office.

(It was voted, on motion of Dr. Turner, duly seconded, that the report of the Budget Committee be adopted.)

METHOD OF HANDLING COMMITTEE FUNDS

DR. STANGE: I would like to make one announcement on behalf of the Executive Board. The Board has requested and directed the officers of this organization to keep all of the funds in the hands of the Treasurer until they are expended, and that funds in the hands of committees existing at the present time, of whatever nature they may be, be turned over to the Treasurer.

We took this action for the following reasons: On a number of occasions money has been voted for committees and a check for the entire amount simply turned over to the committee. We feel that it is a more businesslike way to handle the matter if the committee is allowed to go ahead and spend up to the amount appropriated, but the funds remain in the treasury until they are expended. We believe the funds that are out in the hands of the committees at the present time, as to some of which we have no detailed reports, ought to be turned back to the Treasurer and remain there until they are expended. We have that officer under bond. If the funds are

deposited in the name of the chairman of the committee and if anything should happen to him the Association is out and there is no means of getting those funds back. We believe that as a business proposition these funds ought to be in the hands of the Treasurer until they are expended.

DR. TURNER: I would like to ask the Executive Board what their idea is relative to the manner in which funds are to be expended. As a member of one committee, I have been somewhat embarrassed at times to know just how this expenditure should be made; whether or not expenditures should be made and bills rendered to the Secretary from time to time; whether that was at the disposition of the committee, or whether they wished one bill brought in at the end of the year and presented for the amount. You can see, especially in the Legislative Committee, we have been somewhat embarrassed at times, and we have never been just acquainted with the disposition or feeling of the Board relative to the expenditures of this committee.

THE PRESIDENT: The Secretary can inform you as to the method adopted by the different committees.

SECRETARY MAYO: It is very important that all expenditures be billed and sent to the Secretary's office just as soon as possible, for this reason: If a sum of $500 or $1,000 is voted to a committee, we keep a check on that amount as it is vouched for, and we notify the committee that we have only so much left. If you wait until the end of the year we have no means of knowing, and neither has the chairman, unless it is handled through the chairman of the committee, and the chairmen don't look after that always as they should. We must know if they are going to overdraw their apportionment or not. Just as soon as a proper bill is sent to the Secretary's office, a voucher is drawn immediately and forwarded through the President to the Treasurer for payment.

DR. W. H. HOSKINS: Ought not all bills that are presented to the members of the committee to go first to the chairman for approval?

THE PRESIDENT: That is the custom.

DR. W. H. HOSKINS: I have used all the money of the Legislative Committee. Bills have come to me, been approved by me and sent to the Secretary for his approval.

SECRETARY MAYO: We would like to get all bills as soon as possible.

DR. STANGE: If necessary, I will make a motion that that action be approved.

(It was voted, on motion of Dr. Stange, seconded by Dr. W. Herbert Lowe, that bills be sent to the chairmen of committees for approval and then sent to the Secretary's office as soon as possible.)

RECONSIDERATION OF ACTION ON APPLICATIONS FOR MEMBERSHIP

DR. A. R. ANDERSON (Johnstown, Pa.): May I make a motion to reconsider the action taken on the two applicants from Ohio who were rejected?

(It was voted, on motion of Dr. Anderson, duly seconded, that the action taken on the applications for membership of J. C. Slade and R. V. Cannon be reconsidered.)

DR. LAMBERT: As Resident State Secretary from Ohio, I move that these applicants be referred to the Executive Board for such disposition as they desire to make.

(Seconded by Dr. W. H. Hoskins and carried.)

DR. HILTON: As a member of that Executive Board I wish to ask if it is not a fact that the Executive Board can act only in accordance with the Constitution of this Association, and as far as that Constitution is concerned we are obliged to accept any colored gentleman; so if you refer it back to the Executive Board they have no option.

THE PRESIDENT: The Board can handle this question. Under the conditions you speak of, that would not come up before the house, but will be taken up before the Board.

REPORT OF COMMITTEE ON COÖPERATION OF VETERINARY ASSOCIATIONS

THE PRESIDENT: The next thing in order is some reports which we have held over. We will hear from Dr. Welch's committee.

(Dr. Welch presented the report of the Committee on Coöperation of Veterinary Associations, as follows:)

At the last meeting of the A. V. M. A., at the suggestion of our Executive Board, there was appointed what was designated as "a committee to devise a plan looking toward a closer connection or affiliation between the A. V. M. A. and the different State and Provincial veterinary associations."

Your committee has given this subject serious consideration. It has likewise secured the ideas and opinions of many members of long experience in A. V. M. A. affairs.

In the very nature of events, the objects of all veterinary organizations are identical. They should coöperate and work in harmony. Therefore, in our opinion, there should be established an intimate affiliation between the A. V. M. A. and all State and Provincial veterinary organizations.

Your committee believes that this desired affiliation can be maintained more easily and effectively through the medium of the already existing Section of Veterinary Colleges and Examining Boards than through the creation of a new section. If the report of your committee is accepted, we would recommend a change in the By-Laws so that the title of said section shall read, "Section on Veterinary Colleges, Examining Boards and State and Provincial Associations."

Your committee would recommend that there be no change either in the manner of appointment or in the specified duties of the Resident State Secretaries, but it is urged that Resident State Secretaries exhibit a more active interest in the performance of their duties, especially in the matter of visiting the various veterinary organizations within their States or Provinces for the purpose of stimulating interest in the A. V. M. A., emphasizing its importance to the profession and increasing its membership.

We would further recommend that the veterinary organization of each State and Province, as recognized by the Executive Board of the A. V. M. A., be requested to select and designate an accredited member of its body to represent it at each annual meeting of the A. V. M. A. for the purpose of bringing to the attention of the A. V. M. A., through the Section of Veterinary Colleges, Examining Boards and State and Provin-

cial Associations, all matters of interest and importance to the veterinary profession of the State.

We believe that we are not yet ready for such a radical change as must ensue should we adopt the existing plan of the American Medical Association in its relation to subordinate State associations, but that the recognition of an accredited delegate from each State and Provincial association at our meetings, and the reception of our Resident State Secretaries as our representatives by the different State and Provincial associations at their meetings, constitute a feasible working plan whereby we may coöperate fully along all lines and be mutually helpful to one another.

W. H. WELCH,
U. G. HOUCK,
W. H. DALRYMPLE.

(It was voted, on motion of Dr. W. Herbert Lowe, duly seconded, that the report of the Committee on Coöperation, as read by Dr. Welch, be adopted.)

SECRETARY MAYO: Is there anything there that will come to the Executive Board?

DR. WELCH: The changing of the name of the Section on Veterinary Colleges and Examining Boards, adding thereto "State and Provincial Associations."

THE PRESIDENT: Just prepare an amendment and introduce it.

DR. STANGE: I have an amendment on that particular paragraph which I want to hand in a little later.

REPORT OF COMMITTEE ON NECROLOGY

THE PRESIDENT: The next committee is the Committee on Necrology, Dr. Connaway.

(Dr. Connaway read the report of the Committee on Necrology. It was voted, on motion of Dr. W. Herbert Lowe, seconded by Dr. Hollingsworth, that the report be adopted.)

REPORT OF COMMITTEE ON INTERNATIONAL VETERINARY CONFERENCE

THE PRESIDENT: The next committee is the Committee on International Veterinary Conference, Dr. Eichhorn.

(Dr. Eichhorn read the report of the Committee on International Veterinary Conference, as follows:)

In order that your committee might extend the invitation to hold the next International Veterinary Congress in the United States through the proper channels, it deemed it necessary to ascertain the existing situation with reference to the status of the Permanent Committee. Besides, in view of the fact that the last International Veterinary Congress in London was abruptly terminated by the advent of the war, a communication was also sent to Sir Stewart Stockman, Secretary General of the last International Congress, in order to learn what the attitude of the profession in Great Britain is with regard to the next Congress. Dr. DeJong, the Permanent Secretary of the last International Congress, was also communicated with, informing him of the appointment of this committee at the New Orleans meeting and extending to the Permanent Committee the invitation to hold the next International Congress in the United States of America. In his reply he informed your committee that it would be necessary to reorganize the Permanent Committee before any steps could be taken, and that such steps for a reorganization are now under way; and at the same time he also expressed the opinion that it will hardly be possible to have another International Congress for at least three to four

years. Furthermore, he also stated that it might be advisable to have the next Congress in London on account of the abrupt termination of the last Congress there.

Sir Stewart Stockman, Secretary General of the last International Veterinary Congress, has also expressed himself on the inadvisability of holding the next Congress for at least three or four years.

While there was no inclination on the part of any of those who have been approached to refuse the invitation extended by our Association, nevertheless there seems to be the feeling that the next Congress should be held at London. Your committee therefore advised both the Secretary of the Permanent Committee and the Secretary General of the last Congress that we will be glad to abide by any decision and give full support to the next Congress without regard to the location which might be selected.

In the July number of the JOURNAL of our Association your Editor published an editorial on the International Veterinary Congress which, in part, is a translation of an editorial which appeared in the *Revue Générale de Médecine Vétérinaire*. Your committee deems it advisable to refer to this editorial, inasmuch as it involves the future relationship of the veterinarians of the allied countries with those of the countries with which they have been at war. In this editorial attention has been called to conferences of the Allied and Associated Academies, at which conferences it was decided that new associations should be established by the allied nations with the eventual concurrence of the neutrals, and that from these associations the Central Empires should be excluded. In this editorial it is also stated that we must abide by such a plan, and that if the American Veterinary Medical Association has been ignorant of this irrevocable decision, its initiative is not explained.

Your committee believes that an execution of the plans of the Allied and Associated Academies is not in accord with the American spirit of democracy, and furthermore, that such action would tend to a prolongation of estranged relations with the veterinarians of the former Central Empires. Your committee also believes that with peace reëstablished it would be ill advised to discriminate against the scientists of certain countries and particularly so against members of our profession. The veterinary profession of this country is fully aware of the many valuable contributions made by investigators of animal diseases from the former Central Empires and the assistance they have rendered in the promotion of veterinary science. We have in mind such men as Ostertag, Schutz, Friedberger, Frohner, Hutyra, Marek, and many others, whom we have always considered ardent and faithful workers of our profession, devoting their lives to the advancement of veterinary science.

Your committee therefore recommends that the veterinary profession of America should not join at this time any scientific organization which would absolutely discriminate against members of the Central Empires. Such a step should be carefully considered and decided upon only after the most earnest deliberations. Furthermore, your committee suggests that the Association should foster the resumption of the pleasant relations which existed among the veterinarians of the different nations before the war and use its influence for the reëstablishment of a pleasant professional harmony.

Your committee also recommends the continuance of this or a newly appointed committee for the purpose, if called upon, of assisting in the reorganization of a Permanent Committee and also to act for the Association on any matter pertaining to the next International Veterinary Congress. Furthermore, it is recommended that, should the Permanent Committee decide upon a meeting place outside of America, this committee should serve as the American Committee for the promotion of the next Congress.

J. R. MOHLER, *Chairman.*
A. EICHHORN, *Secretary.*
C. A. CARY.
DAVID S. WHITE.
L. A. MERILLAT.

(It was voted, on motion of Dr. Eichhorn, seconded by Dr. W. Herbert Lowe, that the report of the committee be adopted and the committee be continued.)

REPORT OF THE COMMITTEE ON SALMON MEMORIAL FUND

THE PRESIDENT: The next report is the report of the Committee on Salmon Memorial Fund, by Dr. Hoskins.

(Dr. Hoskins read the report of the Committee on Salmon Memorial Fund, as follows:)

During the past year this committee met with the irreparable loss of its chairman, Dr. John Frost Winchester. Dr. Winchester was a life-long friend of the late Dr. D. E. Salmon and was associated with him in the early development of the great veterinary sanitary control measures he so successfully promoted. President Cary, subsequent to the death of Dr. Winchester, appointed Dr. L. H. Howard, of Boston, to fill the vacancy on the committee. By vote of the members of the committee Dr. Samuel Brenton was chosen as chairman to fill the vacancy caused by Dr. Winchester's death.

Three additional $25 subscriptions were added during the year, from Drs. A. M. Farrington, J. S. Anderson and Robert S. MacKellar, making a total of 44.

The Maine Veterinary Medical Association subscribed and appropriated $50, which, with a previous subscription of $10, brought their contribution to $60. This, with other subscriptions, makes a total for Maine of $65.

New York State continues to lead all other States with a total of $676.07, having added $29 in subscriptions the past year.

At the solicitation of Dr. J. S. Anderson, of Omaha, one of the members of the committee, and the assurance of President Campbell, of the Missouri Valley Veterinary Medical Association, that a direct appeal to the members from the various States making up that body would win their support, I journeyed to Omaha in July and was accorded a most cordial hearing and hearty coöperation by the officers and members of that Association. Nebraska, which had not been on our list as a contributor, added $123.50 and promises to make it $300. Kansas added her first subscriptions, amounting to $40, and promises to treble this amount at her next State meeting. Missouri added to her former subscriptions and pledged her quota in the near future. Colorado and Illinois pledged to increase their subscriptions. The invitations from President Campbell and Dr. Anderson of our committee give assurance of more than $500 to the fund in the near future, as the membership of all these Missouri Valley States is now being canvassed by representatives of these States selected at the Omaha meeting.

The amount on deposit to the credit of the fund now reaches $3,956.40 and in addition a $500 United States Government bond. The additional pledged subscriptions, in part contingent, bring the total to approximately $5,500. During the year interest on the deposit and on the United States bond has added $94.26 to the fund.

Two States, New York and Iowa, and the District of Columbia have exceeded their quotas with respectively $676.07, $470.61 and $614.86. It should be noted that the latter sum was gathered from Bureau veterinarians over the country and not alone from Bureau veterinarians in the District of Columbia.

The list attached hereto gives the subscriptions from the several States as nearly correct as possible, save those contributions made through the B. A. I., which are not credited to the States. The list of associations contributing from their treasuries is herewith attached, also a list of those contributing $25 or more.

Members of the committee in attendance at this meeting will be glad to

receive additional contributions from any members who have not had an opportunity of making the same.

State Contributions Since Last Report

Nebraska	$123.50
Maine	50.00
Kansas	40.00
New York	29.00
Missouri	22.00
Oklahoma	11.00
South Carolina	1.00
Illinois	1.00
Iowa	1.00
Indiana	1.00
Ohio	1.00
	$280.50

Association Contributions to Salmon Memorial Fund

New Jersey State Veterinary Medical Association	$100.00
Virginia Veterinary Medical Association	50.00
Wisconsin Veterinary Medical Association	100.00
Massachusetts Veterinary Medical Association	100.00
Central New York Veterinary Medical Association	25.00
Michigan State Veterinary Medical Association	100.00
Connecticut Veterinary Medical Association	50.00
Keystone Veterinary Medical Association	25.00
Western New York Veterinary Medical Association	25.00
Lake Erie Veterinary Medical Association	25.00
Ohio State Veterinary Medical Association	100.00
Illinois State Veterinary Medical Association	50.00
Indiana State Veterinary Medical Association	100.00
Manitoba Veterinary Medical Association	50.00
Hudson Valley Veterinary Medical Association	10.00
Maine Veterinary Medical Association	60.00
New York County Veterinary Medical Association	25.00

State Contributions to Salmon Memorial Fund

New York	$676.07
District of Columbia	614.86
Iowa	470.61
Minnesota	236.00
Ohio	221.00
Pennsylvania	212.00
Massachusetts	205.00
Michigan	194.00
New Jersey	165.00
Indiana	139.00
Illinois	132.00
Nebraska	123.50
Wisconsin	106.00
Canada	75.25
Missouri	74.00
Connecticut	73.00
Maine	65.00
Virginia	59.00
Tennessee	51.00
Kansas	40.00
Montana	33.00
California	27.00
Louisiana	25.00

Mississippi	20.00
Army Veterinarians	17.00
Colorado	16.00
Oklahoma	11.00
South Carolina	6.00
North Dakota	2.00
Georgia	1.00
Texas	1.00

W. HORACE HOSKINS, *Chairman.*

(It was voted, on motion of Dr. W. G. Langford, duly seconded, that the report of the Committee on Salmon Memorial Fund be adopted.)

SUB-COMMITTEE; AMENDMENT TO BY-LAWS; RELIEF COMMITTEE

DR. STANGE: I want to announce that the sub-committee of the Executive Board for considering the offices of Secretary, Editor and Business Manager is Dr. Munce, chairman, Dr. Hilton and Dr. Bennett.

I also want to give notice of a proposed amendment to the Constitution and By-Laws. I move that article 12, section 1, of the By-Laws be amended by substituting "Education and Research" for "Veterinary Colleges and Examining Boards" in paragraph C of the above section. That will lie over.

I would like to move that the Secretary and the President act as a relief committee during the next year. It has been found rather difficult to get reports from persons that actually need assistance and relief, and we thought that the officers were probably in closer touch with what the members were doing and were in better position to find out who needed assistance, so I move that they act as a relief committee during the next year.

(It was voted, on motion of Dr. Stange, seconded by Dr. Hollingsworth, that the President and the Secretary act as a relief committee during the next year.

PLACE OF NEXT MEETING

DR. STANGE: One more motion, Mr. Chairman. A number of persons have spoken to members of the Executive Board and others, I think, and there seems to be a feeling that a change may be desired in the location of the next meeting place. Therefore I want to make a motion that the Executive Board be authorized to change the place of the next meeting to some other city in Colorado, provided it is agreeable to and recommended by the veterinarians of that State and approved by the Executive Board. I simply make that so as to give the veterinarians of Colorado and the Executive Board an opportunity to make a change if they all think it is desirable. It doesn't change the State at all, but gives them a chance to change the city if desired.

(The motion was seconded by Dr. W. Herbert Lowe and carried.)

MESSAGE TO DR. GRANGE

DR. CONNAWAY: I would like to call attention to the fact that Dr. Grange is very ill and probably will not live long, and I believe it would be appropriate for our Secretary to express the sympathy of this Association in a nice letter or telegram.

THE PRESIDENT: Unless there is some objection, the President will instruct the Secretary to do that.

INTERNATIONAL COMMITTEE ON BOVINE TUBERCULOSIS

DR. REYNOLDS: There seems to be some question as to the status of the International Committee on Bovine Tuberculosis. Some members of the present committee have had the impression that it was in some way a sort of continuing committee. I took occasion to ask Secretary Mayo the other day, and he expressed the opinion that it was not the idea of continuing the committee. If that is correct, the work of the committee would be terminated automatically. This Association has already instructed a future committee to do certain things. When you adopted the report the other day you projected certain lines of work in the future to be done by this Association through future committees. That committee will be terminated automatically unless we do something. In view of the problems now before us and others in sight, it seems to me quite desirable that this Association should continue a committee of some kind on tuberculosis.

There is another point that I presume might be brought up, although probably nothing can be done about it. There really should be a small fund available for this committee, if needed, though it wasn't needed at this meeting and may never be needed. This committee ought to meet a day or two before the Association, if possible, or at least have a meeting other than during this Association meeting. That might involve some additional expense for a member of the committee who might have to pay his personal expenses to such meetings. It happened that in the present meeting nothing of that kind would have been needed, but really something of that kind should be provided for future business. The amount of money would be very small, probably $100 or $200, but I presume nothing could be done now according to the way we handle our finances.

It is embarrassing for the chairman to take this up, but I am of the opinion that the work should not be dropped automatically, and I move that the present committee be continued, that there should be continued an International Committee on Bovine Tuberculosis.

(The motion was seconded by Dr. W. Herbert Lowe and carried.)

PRESENTATION OF PAPERS

THE PRESIDENT: Now we will go to the papers. The first paper that comes up this morning is "The Production and Inspection of Biological Products for Veterinary Use," by Dr. D. I. Skidmore, of Washington, D. C.

(Dr. Skidmore read his paper, which will be published in a later issue of the JOURNAL.)

REPORT OF COMMITTEE ON RESOLUTIONS

THE PRESIDENT: We will go on to the report of the Resolutions Committee. Dr. White is chairman.

DR. WHITE: The Committee on Resolutions respectfully submits the following report:

Registration Fee for Conventions

Whereas, The Association has grown to such proportion as to make its entertainment when in convention a financial burden difficult to carry, especially for the less populated portions of the country and the members of the profession of the State in which the conventions are held:

Resolved, That a registration or entertainment fee of $1 be charged each member attending a convention, the money so collected to be made available to the local Committee on Arrangements.

Emblematic Pin or Badge

Whereas, It is customary to furnish the members in attendance at the annual meetings of this Association with a pin or badge;

And whereas, The cost of providing such pins or badges reaches a considerable sum which is hardly justified unless a more suitable and uniform emblem is adopted:

Resolved, That a special committee of three be appointed to consider this matter with a view to the adoption of a pin or badge of a uniform or emblematic design for use at all future meetings.

Correspondence Schools

Whereas, The veterinary examining boards in the various States frequently receive applications from men representing themselves to be graduates of a veterinary correspondence school at London, Ontario, and these persons present as their credentials a certificate or so-called diploma of the Veterinary Science Association and the Detroit Veterinary Dental College signed by Messrs. Hodgins and Haskett;

And whereas, Persons possessing these certificates or diplomas have never attended college, but merely receive a book and a certificate in payment of a certain fee, and in addition a certificate of health for livestock:

Resolved, That this Association bring this matter to the notice of the proper authorities in Canada and the United States, in order that the persons, associations or colleges granting these certificates or diplomas be estopped from issuing them to residents of the United States.

Municipal Meat Inspection at Private Slaughterhouses

Whereas, Dr. William Thompson, of Canada, has presented a valuable contribution relating to the danger of tuberculosis being transmitted to human beings through the consumption of meats from cattle and hogs killed at private slaughterhouses under insanitary conditions and without proper supervision or adequate inspection:

Resolved, That this Association place itself on record as being of the opinion that the time has arrived when all municipalities should enact and enforce such measures as may be necessary to safeguard the public health against the consumption of unwholesome meats and meat products, and that this protection can best be afforded by suitable legislation requiring the supervision of all private slaughterhouses and the inspection of all animals slaughtered therein by competent veterinary inspectors.

Unfair Classification of Government Veterinarians

Whereas, The Congressional Reclassification Committee through error was manifestly unjust in regard to veterinarians of the United States De-

partment of Agriculture, having isolated them from all other employees doing scientific and technical work, in placing them in a lower grade than the above-mentioned workers;

And whereas, The qualifications to become veterinarians under United States civil-service requirements are of as high standard as those for the appointment to any other scientific and technical appointment in the Government service;

And whereas, The services rendered to the livestock industry of the Nation, and to society at large, in the control and eradication of contagious, infectious or communicable diseases, and the guaranty to the public of a wholesome meat supply, are of as great importance as the services rendered by any other group of scientific Federal employees:

Th refore be it resolved, That the American Veterinary Medical Association protest against the discrimination made against the Bureau of Animal Industry veterinarians;

And be it further resolved, That the Legislative Committee of the American Veterinary Medical Association be instructed to take vigorous action in endeavoring to have the above-described error corrected by Congress;

And be it further resolved, That copies of this resolution be sent to the Honorable E. T. Meredith, Secretary of Agriculture; to Dr. J. R. Mohler, Chief of the Bureau, and to each member of the Committee on Reform in Civil Service, House of Representatives, and to the Appropriations Committee of the United States Senate.

Death of Gen. William C. Gorgas

Whereas, Through the death of Major-General William C. Gorgas, late Surgeon General of the United States Army, the world has lost one of its ablest sanitarians, through whom the Panama Canal Zone was made habitable and the Canal made possible as the result of his skill in combating such scourges as yellow fever and malaria;

And whereas, Dr. Gorgas was an honorary member of this Association, and in him the veterinary profession had always a loyal supporter and wise counselor, through whose influence and guidance the establishment of the Veterinary Corps of the Army was made possible:

Resolved, That this Association record its deepest regret at the irreparable loss sustained and its fullest appreciation of the many evidences manifested by the late William C. Gorgas in the welfare and advancement of the Veterinary Corps of the Medical Department of the United States Army.

Commercial Biological Products

Whereas, The commercialization of biological products has given rise to a variety of products being placed on the market purporting to be specific for the cure and prevention of disease, the real value of which is unknown in many instances;

And whereas, In order to protect the livestock industry and the owners of livestock from being victimized by unreliable concerns:

Resolved, That this Association request the Bureau of Animal Industry of the United States Department of Agriculture that in the future it refuse to allow commercial biological concerns who hold Federal licenses to manufacture and distribute any products until they are satisfied, either by thorough investigation or experimentation, that such products are of material value as immunizing or therapeutic agents.

Thanks for Hospitality

Whereas, The local Committee on Arrangements, the veterinarians of the State of Ohio and the management of the Deshler Hotel have extended this Association at its annual meeting at Columbus every possible assistance for the comfort of the members:

Resolved, That the Association extend its fullest appreciation and thanks for the kindnesses received at their hands and the splendid success of the Fifty-seventh Annual Meeting of the Association.

Horse Association of America

Resolved, That the American Veterinary Medical Association indorses fully the organization and efforts of the Horse Association of America, located at Chicago; that the American Veterinary Medical Association become a member of the Horse Association and subscribe for ten shares of stock at $5 a share; that the members of the American Veterinary Medical Association be urged to join the Horse Association and to solicit members, if possible, from their friends and clientele who are further in favor of the horse and mule industry; and that the incoming President be authorized to appoint a member of our Association as official representative of our Association.

DAVID S. WHITE, *Chairman.*
WM. HERBERT LOWE,
C. D. MCGILVRAY,
A. S. COOLEY,
CHAS. E. COTTON.

(It was voted, on motion of Dr. W. H. Hoskins, seconded by Dr. Hollingsworth, that the report of the Committee on Resolutions be adopted.)

STUDENTS FROM FORMERLY ACCREDITED SCHOOLS

DR. STANGE: My attention has been called to one thing that ought to be taken care of, I think, before we adjourn. I would like to make this motion: That the Committee on Intelligence and Education be authorized to give special consideration to students who entered schools accredited by this Association at the time of their entrance, with a view of permitting these students to complete their education.

My idea is that these students entered accredited schools in good faith, but some of these schools are not accredited by this Association now, and we ought to make it possible for such students to complete their education. Some of the accredited schools are raising the question as to whether they can accept students from schools that are not accredited at present. A school that is accredited with this Association can't accept students from non-accredited schools and give them credit for their work. That throws those students out, and they can't complete their education in an accredited college unless we give them permission to do so.

DR. SIMMS: A point of information: That gives the committee power to act in regard to these students?

DR. STANGE: That gives this committee authority to make arrangements to have these students complete their education.

(The motion was seconded and carried.)

VOTE OF THANKS

DR. STANGE: I wish to make one more motion, Mr. Chairman: That this Association extend a vote of thanks to the veterinarians of Ohio, to the Chamber of Commerce of Columbus and any other interests in this State who were associated in making this convention a success.

(The motion was seconded by Dr. Hollingsworth and carried.)

INSTALLATION OF NEW PRESIDENT

THE PRESIDENT: Unless there is something further, this brings us to the close of our meeting. I will ask Dr. Stange to escort the newly elected President to the chair for installation.

(Dr. Stange brought Dr. White to the chair. Applause.)

THE PRESIDENT: It affords me great pleasure to extend to the newly elected President, who is most worthy of this office, the only credentials of the office that were ever extended to me. It is the famous gavel of "Honolulu Bill." I want to assure the newly elected President that the profession will give him as hearty and more hearty support than they gave me. (Applause.)

DR. WHITE: Mr. Ex-President and Gentlemen, the hour is late and we are very hungry, so I am not going to make a speech. I simply will say this: that in accepting this token of office, the gavel, I fully realize the responsibilities that go with it; and in thanking you for the honor bestowed upon me, which I assume to be the highest honor that a veterinarian can attain in North America, I do so with a spirit of service and only in that spirit. I thank you. (Applause.)

Adjournment.

NOTES FROM THE SECRETARY

In accordance with the action of the American Veterinary Medical Association at Columbus, the Secretary was instructed to notify Dr. T. E. White, of Sedalia, Missouri, that his dues to the A. V. M. A. were remitted and membership card was sent him.

The Secretary has received a letter from Dr. White in which he states that he is unable to express his gratitude to the Association for their kind interest in him. He wishes to thank the Association from the depth of his heart.

Dr. White has been very ill for several years and this, in connection with his advanced age, makes it impossible for him to do any work.

N. S. MAYO.

To All Members of the A. V. M. A.:

At the last meeting of the A. V. M. A., the Association decided to place the administration of the veterinary relief fund in charge of the President and Secretary of the Association. After consultation, it is planned to have the Resident State Secretaries look after cases of need among the members of the A. V. M. A. and their families in their respective States and Provinces, but it is important that each and every member report immediately to the President or Secretary any cases where A. V. M. A. members or their

families are in need of assistance, so that prompt attention can be given. N. S. MAYO.

The following have been nominated by postal card nominations for members of the Executive Board from District No. 5: C. E. Cotton, W. S. Crewe, C. P. Fitch, W. P. Spencer, C. H. Stange.

Postal card ballots are being sent out to all members in the 5th District for the final vote.

A meeting of the Executive Board of the A. V. M. A. has been called by President Hilton to be held at LaSalle Hotel, Chicago, Sunday evening, November 28, 1920. At this meeting it is probable that the exact time and date for the next A. V. M. A. meeting will be determined. N. S. MAYO.

Your Journal Stops Unless Dues Are Paid

According to the Constitution and By-Laws of the A. V. M. A., members who have not paid their dues within four months must be dropped from the JOURNAL mailing list. If you have not paid your 1920 dues your JOURNAL will stop January 1, 1920.

Don't forget this. It will mean a great saving of time of the Secretary as well as the Editor and money for the Association if those who have not paid will do so promptly. Send your check now to the Secretary.

Dr. A. H. Baker has donated to the A. V. M. A. 18 bound volumes of the proceedings of the Association.

The many friends of Dr. R. A. Archibald, member of the Executive Board from the 6th District, will rejoice to learn that he is gradually recovering his health and expects to attend the next A. V. M. A. meeting in Colorado.

The Colorado Veterinary Medical Association has appointed the following committee to make arrangements for the A. V. M. A. meeting in Colorado next year:

Drs. G. H. Glover, Chairman; Charles G. Lamb, A. G. Fisk, A. N. Carroll and I. E. Newson.

The personnel of this committee is sufficient to take care of all A. V. M. A. members so that the arrangements for the next meeting will be splendidly carried out in every way.

OTHER MEETINGS

MONTANA VETERINARY MEDICAL ASSOCIATION

The twelfth annual meeting of the Montana Veterinary Medical Association was held in Butte, July 29 and 30. The meetings were presided over by Dr. F. B. Remer, of Stanford, president of the association.

At the morning session on July 29 the routine business for the year was transacted. Addresses of welcome were delivered by Mayor Stodden, of Butte, and Lieutenant Governor W. W. McDowell, to which Dr. N. T. Gunn, of Butte, responded.

At the afternoon and evening meetings the following papers were presented: "The Livestock Sanitary Board Laboratory," Hadleigh Marsh, Helena; "The Veterinary Corps in the A. E. F.," Major M. E. Knowles, Helena; "Bovine Contagious Abortion and Sterility," G. F. Jungerman, Hiawatha, Kansas; "Veterinary Biological Laboratories and Supply Houses from the Practitioner's Viewpoint," V. W. Knowles, Ronan; "Veterinary Biological Laboratories and Supply Houses from the Distributor's Standpoint," J. S. Barbee, Kansas City, Mo.

Dr. Knowles's talk on the Veterinary Corps and Dr. Jungerman's paper on contagious abortion produced some very active and valuable discussion.

Officers were elected at the evening meeting, Dr. M. E. Knowles, of Helena, being unanimously chosen for president. Dr. A. D. Knowles asked to be relieved of the duties of secretary and treasurer, and Dr. N. T. Gunn was elected to the position.

The second day of the meeting was devoted to clinical work at the plant of the Hansen Packing Company, the morning being devoted to tuberculosis. Dr. Welch, of Bozeman, discussed the "Temperature Range of Normal Cattle," in its relation to the application of the subcutaneous tuberculin test. Dr. Gunn, in coöperation with Dr. Evans, B. A. I. Veterinarian at the Hansen plant, gave a demonstration of the intradermal tuberculin test, following the reading of the test with post-mortem examination of the reactors.

In the afternoon Dr. Jungerman gave a very instructive clinic on the treatment of sterile cows.

Socially, as well as professionally, the meeting was very successful. Mr. Hansen, of the Hansen Packing Co., entertained the

men at luncheon at his home. The ladies were entertained by Mrs. Hansen at her home and by Mrs. Gunn and Mrs. A. C. Jones at the Country Club. The meeting was concluded with dancing at the Columbia Gardens, as guests of Mr. and Mrs. Hansen.

N. T. GUNN, *Secretary.*

BRITISH COLUMBIA VETERINARY ASSOCIATION

The annual meeting of the British Columbia Veterinary Association was held in New Westminster on September 28.

There was an exceptionally fine attendance and great interest shown in furthering the interests of the profession.

The amendments to the Contagious Diseases Animals Act that we succeeded, with the help of the Dairymen's Association, in getting passed at the last session of the Legislature, in connection with the control and sale of tuberculin to prevent plugging, were discussed, and it was found that the amendments were not passed in accordance with our resolution, proper recognition not being given to the veterinary profession, and by the wording of the Act it appears to have legalized the injection of tuberculin by the layman.

These points were discussed and a committee was appointed to again take up the matter with the dairymen, and have these amendments altered.

The matter of meat inspection was then discussed, especially the practice of the Provincial Government in forbidding its veterinary inspectors to hold post-mortems of the cattle that have reacted to their test, and permitting these carcasses to be sold to the public without inspection.

The Association went on record that this was a menace to public health and intends to give this matter full publicity this fall. However, the Association feels that its efforts at publicity are slowly bearing fruit, as evidenced by the requests of the consumers for inspected meat and the signs appearing in the shops and advertisements in the newspapers that the meat sold is Government inspected. As a result of our meeting with the Rotary Club in Victoria last fall we can note that a meat inspector has been appointed for that city.

A letter was then read from one of the members in regard to the Canadian Army Veterinary Services, pointing out that four

Assistant Directors of Veterinary Service had been appointed, who were all qualified veterinary surgeons, but that no Director had yet been appointed. The Association is in receipt of a letter from the Quartermaster-General, dated February 5, in which he states that it is intended to appoint a Director of Veterinary Service who shall be a qualified veterinary surgeon. This letter was read, and it was moved and carried that this Association write the Militia Council reminding them of this letter.

A new scale of fees was worked out and copies will be sent to all members for their guidance.

A letter was read from Dr. Cozier, Secretary of the Washington State Association, inviting this Association to joint meeting in Seattle, together with the Association of Washington, Oregon, Idaho, some time in 1921. The members present thought this was a very good idea, and we hope to go.

The election of officers then took place, which resulted as follows: President, Dr. T. H. Jagger; Vice-President, Dr. T. Brookes; Secretary-Treasurer, Dr. Kenneth Chester; Council, Dr. M. Sparrow, Dr. T. E. Sleeth, Dr. A. J. Damman, and Dr. George Howell.

The following Board of Examiners was also appointed, which by our Act must consist of either Dominion or Provincial Inspectors: Chairman, Dr. Kenneth Chester, Health of Animals Branch; Dr. M. Sparrow and Dr. T. Brookes, Provincial Veterinary Inspectors.

After the business meeting the Association was the official guest of the Provincial Exhibition Association and in the evening a most enjoyable banquet was held, our past President, the Hon. Dr. S. F. Tolmie, Dominion Minister of Agriculture, acting as toastmaster, and as invited guests there were prominent dairymen and stockbreeders, officials of the exhibition, members of Parliament and other public men and women, making a total of 57. Speeches were made by veterinarians and replied to by various persons, one of the best being by a lady, the President of the Local Council of Women, acknowledging the benefit to the public of the veterinary profession in the matter of public health, and many went away with a much better understanding and appreciation of veterinarians and the profession in general.

The meeting and banquet were fully reported in the newspapers and this brought to an end one of our most successful annual meetings.

KENNETH CHESTER, *Secretary*.

UNIVERSITY OF PENNSYLVANIA VETERINARY ALUMNI GATHERING

On Tuesday evening, August 24, during the annual meeting of the American Veterinary Medical Association at Columbus, Ohio, forty-three alumni of the University of Pennsylvania got together at the Hotel Chittenden and had dinner.

President Tingley called a special meeting and asked Dr. John W. Adams to preside. Dr. Adams gave a short address and then called on each alumnus in turn. Various subjects were discussed and many jokes and short stories were told. Things of interest pertaining to the school were discussed more or less in detail by Drs. John R. Mohler, S. H. Gilliland, J. H. McNeil, Chas. Cotton, and several others. Dean Klein spoke of the relationship of the faculty, alumni and students, and impressed upon the memory of those present that Alumni Day or the day that alumni should gather at the school is always the Saturday before Commencement Day, which is always the third Wednesday in June. The presiding officer knew something of interest pertaining to almost every alumnus present and suitable jokes were intermingled with the more or less serious parts of the evening. Before adjournment Dr. Adams discussed some of the larger problems of the University in comparison with those of other large schools and universities.

Most of the classes from 1888 until 1917 were represented at this gathering. Every person showed an enthusiastic university spirit and went away in good humor. Those present were: L. N. Reefer, James C. McNeil, John P. Turner, Thomas J. Kean, John W. Adams, Chas. E. Cotton, H. W. Turner, C. J. Marshall, A. G. G. Richardson, U. G. Houck, Chas. W. Boyd, John R. Mohler, L. A. Klein, Jose Hernsheim, John H. McNeil, Norris L. Townsend, M. Jacob, S. H. Gilliland, T. E. Munce, G. A. Dick, Chas. W. Springer, C. S. Rockwell, John Reichel, S. E. Bruner, R. M. Staley, H. W. Jakeman, W. G. White, H. Preston Hoskins, J. F. Kane, Cheston M. Hoskins, F. Porter Caughman, M. F. Barnes, Fred Boerner, Jr., Ross A. Greenwood, H. B. Mitchell, Ira Mitterling, E. K. Tingley, Edward A. Benbrook, James M. Herron, Thomas W. Munce, C. B. Shore.

Dr. V. A. Moore, Dean and Director of the Veterinary College at Cornell University, who is an honorary alumnus of Pennsylvania, was also present and gave an interesting talk on veterinary education.

M. F. BARNES, *Secretary.*

EASTERN IOWA VETERINARY ASSOCIATION

The annual meeting of the Eastern Iowa Veterinary Association was held at Iowa City October 6 and 7.

The officers elected for the coming year are: Dr. L. B. Graham, Cedar Rapids, President; Dr. F. L. Roach, Preston, Vice-President; Dr. Jerry Wolfe, Grand Mound, Secretary-Treasurer; Dr. Henry Hell, New Liberty; Dr. J. S. Potter, Iowa City; Dr. F. J. Crow, Iowa City; members of the Executive Board.

The meeting for 1921 will be held at Cedar Rapids.

L. B. GRAHAM, *Secretary.*

TUBERCULOSIS ERADICATION CONFERENCE

The second zone conference on tuberculosis was held in the Leonard Pearson Hall, at the University of Pennsylvania, on October 11-13, and was composed of representative breeders, State and Federal employees engaged in coöperative tuberculosis eradication work in the States of New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, West Virginia, North Carolina, and the District of Columbia.

From the fall of the gavel Monday evening, October 11, to the closing remarks made by the chairman, Dr. John R. Mohler, Chief, Bureau of Animal Industry, the conference was bubbling over with interest. It was apparent from the outset that those in attendance came to contribute to the fund of information on the subject of tuberculosis eradication and to take away with them all the information that could be secured.

In the opening address the chairman pointed out the peculiar fitness of calling such a gathering together in the Leonard Pearson Hall and the splendid work done by that indefatigable leader in outlining plans for the future campaign in the extermination of the disease from this country. He laid emphasis upon the fact that this work is succeeding because it is being conducted on a coöperative basis, the livestock owners forming the foundation upon which the coöperative structure is built. It was manifest throughout the conference that the livestock owners feel the responsibility that they have assumed in the conduct of the tuberculosis eradication campaign and it is their purpose to fulfill every obligation they owe to the great industry they represent. The spirit of coöperation shown by the State representatives in their various discussions made it evident that all the forces at work in this campaign are

putting forth every effort to make it a success and are relegating personal differences of opinion that are considered irrelative to the great work in hand.

In an address of welcome Dr. L. A. Klein, Dean, Veterinary Department, University of Pennsylvania, referred to the pioneer tuberculosis work of Leonard Pearson and gave many valuable suggestions and words of encouragement for the continuation of the work which is now well under way.

Hon. Wesley Webb, Secretary, State Board of Agriculture, State of Delaware, spoke very encouragingly of the interest shown by the livestock owners of that State and predicted the eradication of tuberculosis from the Commonwealth of Delaware within the next few years.

Dr. J. H. McNeil, Chief, Bureau of Animal Industry, State of New Jersey, outlined the program for the work in that State and also presented an excellent paper, "The Value of the Ophthalmic Test in Badly Infected Herds." This paper was prepared in cooperation with Dr. R. J. Fortney, of the New Jersey force, and was read by the latter.

Dr. William Moore, State Veterinarian of North Carolina, told of the work which is being carried on in that State and predicted the continuation of a vigorous campaign until the disease was suppressed in the Tarheel State.

Dr. R. C. Reed, representing the State of Maryland, outlined the program of work being carried on and laid emphasis upon the fact of the eradication of the disease from circumscribed areas. In that State the work is being conducted on an intensive basis in Harford County, the livestock owners of that county having subscribed funds for the employment of a veterinarian to coöperate with the State and Federal departments.

Dr. T. E. Munce, Chief, Bureau of Animal Industry, Harrisburg, Pennsylvania, read an excellent paper containing many recommendations for strengthening the accredited herd plan.

Commissioner J. H. Stewart of West Virginia, and Dr. J. G. Wills, State Veterinarian of New York, made many suggestions of a constructive nature which will aid materially in the perfection of plans for the work.

Dr. Marion Dorset, Chief, Biochemic Division, Bureau of Animal Industry, gave a historical sketch of the discovery of tuberculin and the methods employed in its manufacture by the Bureau of Animal Industry soon after its discovery by Dr. Koch, which

method is still in operation by the Bureau. Dr. Dorset's discourse was discussed by Dr. Fred Boerner, in charge of the laboratory, Bureau of Animal Industry, State of Pennsylvania.

A very valuable contribution on "Experimental Work on Tuberculosis and Tuberculin" was given by Dr. E. C. Schroeder, Superintendent, Experiment Station, Bethesda, Maryland.

An excellent paper, supplemented by extemporaneous remarks, was presented by Dr. J. F. DeVine. The subject of his discussion was "How the Coöperative Tuberculosis Eradication Campaign Affects and Appears to the Practitioner." This interesting paper was discussed by other practicing veterinarians who were in attendance at the conference.

Other papers were contributed by Drs. H. W. Turner and S. E. Bruner, representatives of the Bureau of Animal Industry, Harrisburg, Pennsylvania.

Mr. D. W. McLaury, Director, Bureau of Animal Industry, Albany, New York, outlined the program of the campaign in that State and indicated that the livestock owners of the State of New York were determined to carry the campaign of eradicating tuberculosis to a final success. He anticipates that it will be a hard battle and take many years. He further stated that the time would come when no owner could sell breeding cattle unless his herd was under supervision and every effort was being made to exterminate tuberculosis.

Practically one entire afternoon was devoted to a discussion of the tuberculosis campaign from the standpoint of breeders of purebred cattle, during which the following well-known breeders took an active part: J. R. Danks, Delaware; H. V. Noyes, New York; Joseph A. Turner, Virginia; Paul O. Reymann, West Virginia; George C. Stevenson and H. Philips, of Pennsylvania.

One of the features of the conference was experimental testing done on 24 canner cows. As usual, the results of the subcutaneous test to this class of animals were not entirely satisfactory. In experimental work done with this type of animals covering a period of more than ten years, it has been found that only a certain proportion of tuberculous animals respond to the subcutaneous test. The results with the intradermic and ophthalmic methods of testing were much more satisfactory. These animals were slaughtered during the conference and the results of the post-mortem examinations were received with great interest.

The conference was attended by more than two hundred interested persons. The Leonard Pearson Hall was filled at every session. It is proposed to hold similar zone conferences from time to time in other parts of the country. So far they have proved profitable because they bring uniformity of purpose in the territory in which they have been held.

J. A. KIERNAN, *Acting Secretary.*

PHILADELPHIA VETERINARY CLUB

The Veterinary Club of Philadelphia held its regular meeting on Tuesday evening, September 27, at Leonard Pearson Hall, University of Pennsylvania.

We were honored by having with us Dr. W. Reid Blair, Veterinarian and Pathologist, New York Zoological Park, who gave an illustrated talk on animal intelligence.

The members of the Society for the Prevention of Cruelty to Animals were invited, and also the wives of the veterinarians.

There was a very large attendance, and the meeting was extremely interesting.

C. S. ROCKWELL, *Secretary.*

LIVESTOCK CONSERVATION

A conference of livestock producers, dealers, shippers, stockyard companies, commission men, railroads and meat packers was held at Chicago on November 5. This conference had for its object the reduction of livestock losses in shipping and marketing. This organization has been in existence for approximately a year, and splendid results have been obtained, as shown by the statistics presented at the meeting.

It is the object of the conference to get coöperation among all those who have to do with the handling of livestock. This is not only an economic problem, but also a humane one.

A splendid booklet on how to reduce livestock losses in shipping and handling has been issued. Every veterinary practitioner ought to have this so as to be able to advise his clients. It is free, and can be obtained of the Institute of American Meat Packers, 22 W. Monroe Street, Chicago, Illinois.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION

The next meeting of the Minnesota State Veterinary Medical Association will be held in Minneapolis and at University Farm, January 13 and 14, 1921. The meetings in Minneapolis will be held at Hotel Radisson. The program is already under way. Dr. David S. White, Dean of the Veterinary College at Ohio State University, Columbus, Ohio, and President of the American Veterinary Medical Association, will be present and deliver an address. Dr. D. H. Udall, Professor of Medicine, Veterinary College, Cornell University, Ithaca, N. Y., will give a paper on "Diagnosis and Treatment of Some of the More Important Diseases of the Digestive Tract of Cattle." Dr. T. H. Ferguson of Lake Geneva, Wisconsin, will have a paper on "Diseases of the Udder." Dr. A. Eichhorn, Director, Veterinary Department, Lederle Antitoxin Laboratories, Pearl River, N. Y., will speak on "Anthrax with Special Relation to Prophylactic Measures." Dr. A. F. Schalk, Veterinary College, Fargo, North Dakota, will also have a paper, the subject of which has not yet been selected. A number of other papers will also be presented. The afternoon of the second day will be devoted to a discussion and clinic at University Farm on abortion and sterility. The completed program will be printed later.

C. P. FITCH, *Secretary.*

CALIFORNIA PRACTITIONERS' SHORT COURSE

The Division of Veterinary Science of the University of California, in coöperation with the California State Veterinary Medical Association, is arranging the program for a short course for the veterinary practitioners of the State. The course will be held at the University Farm at Davis, beginning January 3 ,1921, and will continue throughout the week.

Dr. Marion Dorset, Chief of the Biochemic Division of the Bureau of Animal Industry, and Dr. A. T. Kinsley, of Kansas City, will be the principal speakers. Other prominent practitioners and investigators will aid in making the course a success. Special emphasis will be placed upon the diseases of swine. but other timely subjects of interest to the progressive practitioner will also be discussed. Courses of this nature were held at the University Farm in the years of 1916, 1917 and 1919, at which there was an attendance of about seventy-five each year.

COMMUNICATIONS

International Congress on Foot-and-Mouth Disease

Buenos Aires, September 15, 1920.

THE ARGENTINE AMBASSADOR,
Washington, D. C.

Mr. Ambassador—I have the pleasure of communicating to you that at the first session of the International Congress of Foot-and-Mouth Disease, the Assembly, taking note of Art. 16 of the Regulations, resolved, on the motion of Dr. P. Bergés, to designate Dr. John R. Mohler as Honorary President of the Congress, because of the success of his work in the extirpation of foot-and-mouth disease in the United States, and also because of the importance of the work that has been accomplished and is being accomplished by the Bureau of Animal Industry in the struggle against the contagious diseases of cattle, as well as the advance of all industries derived from cattle through these studies.

Praying that you will kindly communicate this resolution of honor and justice to the gentleman interested, I am pleased to salute you with my high consideration.

R. J. CARCANO, *President.*

Messages of Thanks

Alfort, October 12, 1920.

My dear and very honored Colleague—I have the honor to acknowledge the receipt of your very amiable letter of September 15, enclosing a check for $500.00.

Our committee requests me to express to you its most cordial gratitude. It knows and can appreciate the fraternal generosity of our American colleagues toward the French and Belgian veterinarians who were victims of the war. This new testimonial of affection that the American Veterinary Medical Association has given to our work can only strengthen the ties of cordial appreciation that bind us to the United States, and to our colleagues in that noble country.

In December the activities of our committee will be concluded. Its accounts will be liquidated and a general report will inform all our supporters of the work that we have accomplished. It will be a duty and a pleasure to communicate this report to you.

Will you, my dear and very honored colleague, accept with all our thanks for your benevolent assistance, the expression of my most cordial devoted sentiments. H. VALLEE.

Brigadier-General Frey, Director General of the French Army Veterinary Service, Commander of the Legion of Honor, writes as follows:

I am much flattered by the high esteem shown by the American Veterinary Medical Association in electing me an honorary member. I beg you to transmit to President D. S. White, to the members of the society and colleagues my most sincere thanks and the assurance of my most distinguished consideration.

I am happy to learn of the success of the Columbus meeting, and I shall follow with interest the work of the Association.

Tuberculosis-Free Accredited Herds

List No. 3 of herds officially accredited as free from tuberculosis, giving results to June 30, 1920, has been issued by the Bureau of Animal Industry. It shows that there have been established as fully accredited 3,370 herds containing 82,986 cattle (48,471 purebred and 34,515 grade), and that 16,599 herds containing 257,577 cattle have been tested once without reactors. The number of accredited herds almost trebled within a year. Minnesota has the largest number, and next come Virginia, Wisconsin and Pennsylvania.

In the work of tuberculosis eradication during the last fiscal year the Federal and State veterinarians applied the tuberculin test to 695,364 cattle, of which 28,616, or slightly more than 4 per cent, reacted.

Large Production of Veterinary Biologics

In the supervision by the Bureau of Animal Industry of the commercial manufacture of veterinary biological products during the last fiscal year 93 firms were licensed to prepare 177 products of 69 general classes. Fifty-eight of the licensed establishments produced only anti-hog-cholera serum and hog-colera virus. The output of the latter products reached very large proportions. The net production, after deducting the quantities destroyed as unfit for use, was as follows: Anti-hog-cholera serum, 520,016,641 c.c.; simultaneous virus, 21,736,139 c.c.; hyperimmunizing virus, 113,878,741 c.c.

NECROLOGY

DR. SIDNEY F. MUSSELMAN.—The readers of the JOURNAL will receive with surprise and deep regret the sad news of the sudden death on October 25, of Dr. Sidney F. Musselman, State Veterinarian of Kentucky. He is survived by a wife and son, his mother and a sister. His death was the result of an attack of apoplexy while riding in a street car in Louisville, and came as a complete surprise, as he seemed to be enjoying the best of health.

Dr. Musselman was born at Cynthiana, Kentucky, December 7. 1872, in the house which he has always occupied as a home. After graduating from the Ontario Veterinary College in the class of 1894, he immediately took up the practice of veterinary medicine at his home town and continued there until the outbreak of the Spanish-American war, when he responded to the call for volunteers. After the war was over, he continued in the service of his country for twelve years in Cuba and the Philippines. On his return to civilian life he married Miss Ida Remington and resumed his practice at Cynthiana. His magnetism, genial and cordial manners, and his ability won for him many friends and he achieved an enviable reputation as a practitioner in his profession.

He was a member of the Baptist church since he was fifteen years old. In addition to his church affiliations, he was a Royal Arch Mason and a member of the Elks' Lodge at Cynthiana. For five years past he has filled with credit the position of State Veterinarian. The State of Kentucky has lost a most competent, faithful and conscientious official, and a gentleman who was respected and admired by all who had the pleasure of knowing him. He had the interests of his State deeply at heart and the livestock industry of Kentucky has grown and prospered under his able administration as State Veterinarian.

His usefulness as a veterinarian and livestock sanitary officer was not confined to one State. The activity and good judgment he displayed on matters affecting the improvement of livestock and the control of animal diseases were recognized by his fellow-workers in other States in a way to reflect favorably on our national livestock industry. He was known by State and national officials as an efficient, unselfish coöperator, willing to give and take, always keeping in mind the best interests of the livestock industry of both the

State and the Nation. His election to the Presidency of the U. S. Live Stock Sanitary Association at its last meeting was an expression of the esteem in which he was held by the livestock sanitary authorities of forty-eight States, the National Government and Canada. He was a man of stainless character, of wide experience and of high ideals, a prince among men.

Those of us who knew him best valued his friendship most. The JOURNAL joins his many friends from all parts of the country in extending to his bereaved family its deepest sympathy.

Dr. W. W. Kenneday, of Fulton, N. Y., dropped dead on July 4 while loading his gun at a trap shoot that was held at Long Branch, N. Y.

Dr. Kenneday was a graduate of the Ontario Veterinary College in 1890, and joined the A. V. M. A. in 1911.

Dr. Oliver B. Shipman, of Olaa, Hawaii, died on May 11, 1920.

Dr. Shipman was a graduate of the San Francisco Veterinary College in 1904. He joined the American Veterinary Medical Association in 1913.

Members and visitors to the recent meeting of the A. V. M. A. at Columbus will hear with regret of the death of Mr. Hugo Schlessinger from heart failure following an operation for appendicitis. Mr. Schlessinger will be remembered as the gentleman who delivered the pleasing address of welcome at the opening of the session. He was a man of high attainments, a successful Prosecuting Attorney of Franklin County and the nominee of his party for Judge of the Common Pleas Court.

ANOTHER RICH GIFT TO THE LIAUTARD LIBRARY

Mrs. H. D. Gill and family have presented to the Liautard Library some 350 volumes of the late Professor Gill's library.

Several sets of subscription medical works are among this addition, and many valuable works of reference are thus added to the library.

This library is now being carefully catalogued and cross-indexed by Miss Pollock, of Philadelphia, whose twelve years' experience in this field will make it possible to afford ready information to the readers of the JOURNAL from any book that may be desired for consultation or reference.

MISCELLANEOUS

OPPORTUNITIES IN LATIN AMERICA

The following request is a sample of others which have been sent me:

"I have been out of college two years and am doing fairly well, but I would like to go to South America. What are the chances for a graduate veterinarian there? D. E. B."

I suspect that the "call of the tropics" has come to you as it came to many of us in our younger days and I hope if you have the opportunity you will visit some Latin-American countries and see for yourself. Stay long enough to let the novelty of a new and interesting country wear off before you burn any bridges behind you and be sure to have money enough to get back home.

I have never visited southern South America, my experience being confined to the American tropics.

I do not think the opportunities in the American tropics are good for a North American veterinarian who does not speak Spanish, unless he can secure a position with some company or governmental employment.

Livestock conditions in the American tropics are primitive, and the stockmen and farmers as a rule are not in the habit of employing a veterinarian. The few native veterinarians are engaged in city practice.

Another serious drawback to locating in foreign countries is the difficulty in getting legally registered. The amount of red tape involved is amazing to an inexperienced person. You do not state whether you are married and have a family. If you have, you had better put the tropics bug in a cyanide bottle and leave it there unless you are so situated financially that you can afford the trip there and back.

If you have an opportunity to go with a reliable company or can get a government position be sure that you have a contract in writing that is clearly understood.

The advantages of going to a Latin-American country are considerable. These countries are rich in natural resources and there is a charm about them that appeals to many. There is a beautiful language to acquire and the people are delightfully courteous, but you will long for some home cooking that doesn't smell of garlic

and on "steamer days" you will look anxiously for letters from a few faithful friends who still remember you. The isolation from one's own people is the greatest drawback. If you are "foot loose" and want some interesting experiences in a wonderful region, take a chance if you have one. I spent five of the most interesting years of my life in the American tropics and I like them, but I like my own country best.

If you want to get an excellent idea of western South America, read "Vagabonding Down the Andes," by Franck. For delightful fiction dealing with Latin-America, "Captain Macklin" and "Soldiers of Fortune," by R. H. Davis, are fine. N. S. MAYO.

STUDY OF FOOT-AND-MOUTH DISEASE IN URUGUAY

The commission recently named for studying foot-and-mouth disease in Uruguay has recommended that a prize of 50,000 pesos ($51,700) be awarded to the person succeeding, by a practical method applicable to herds, in immunizing animals from this disease for a period of six months, or to the person discovering the specific and morphologic cause of foot-and-mouth disease.

The commission points out that, although the amount of the proposed award may seem excessively large, it is in reality insignificant when compared with the economical results to the nation which would result from such a discovery.

MEAT INSPECTION FIGURES

The output of meat under United States Government inspection during the fiscal year ending June 30, 1920, was second only to the high mark of the preceding year. There were slaughtered under Federal inspection 65,332,477 animals, consisting of 9,709,819 adult cattle, 4,227,558 calves, 38,981,914 swine, 12,334,827 sheep, 77,270 goats and 1,089 horses. Of these, 228,148 animals or carcasses and 748,136 parts were condemned, besides which 18,201,648 pounds of meat and meat food products were condemned on reinspection. Tuberculosis was the cause of condemnation of 103,664 carcasses and 590,727 parts. The inspection was conducted at 897 establishments in 262 cities and towns. It is estimated that the Federal inspection covers about 65 per cent of the meat produced in the United States.

PROTECTING THE HORSE'S FEED

Federal and State officers are trying to break up the common trade practice of adulterating stock feed. In a recently reported prosecution under the food and drugs act a large Chicago grain company was fined $1,050 and costs for adulterating and misbranding 28 carloads of oats. The oats were adulterated with more than 10 per cent of so-called feed barley, which is the grain remaining after the elimination of the sound, heavy grain, and contains, in addition to barley seeds, material amounts of weed seeds, screenings and chaff.

The shipment into interstate or foreign commerce of oats to which any other grains or substances have been added constitutes a violation of the Federal food and drugs act. A mixture of oats and barley or of other grains may be sold provided it is so labeled as to indicate clearly its composition, but the sale as oats of such a mixture is prohibited.

BARIUM A GOOD RAT POISON

A study of barium carbonate as a rat poison, made by the United States Department of Agriculture, indicates that a 20 per cent mixture with food makes a satisfactory bait. With this percentage a rat ordinarily needs to eat only one-third or three-eights of a meal of average size to get a fatal dose. It was found that with this dose many of the rats poisoned died within 24 hours, though an occasional rat was found which survived an even larger amount, thus indicating that 100 per cent mortality is not to be expected in any case.

A summary of results of experiments conducted by various persons with a view of determining the deadliness of barium to different animals shows the fallacy of the assumption that barium is poisonous only to rats. It is pointed out that the fatal dose of barium per pound tends to decrease relatively as the size of the animal increases, and that a bait calculated to be fatal to rats many be assumed to be more or less dangerous to small domestic animals also.

Professor William Herbert Lowe, of the New York State Veterinary College, New York University, was elected chairman of the Committee on Meat Inspection of the Section on Food and Drugs of the American Public Health Association at its recent meeting at San Francisco, California.